H.R. 4326—SMALL BUSINESS INNOVATION ACT OF 1981

HEARING

BEFORE THE

SUBCOMMITTEE ON HOSPITALS AND HEALTH CARE

OF THE

COMMITTEE ON VETERANS' AFFAIRS HOUSE OF REPRESENTATIVES

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JANUARY 27, 1982

HOUSE OF REPRESENTATIVES,
COMMITTEE ON VETERANS' AFFAIRS,
SUBCOMMITTEE ON HOSPITALS AND HEALTH CARE,
Washington, D.C.

The subcommittee met, pursuant to call, at 9 a.m., in room 334, Cannon House Office Building, Hon. Ronald M. Mottl (chairman of the subcommittee) presiding.

Present: Representatives Mottl, Boner, Shelby, Mica, Daschle, Edgar, Dorgan, Hammerschmidt, Heckler, Hillis, Solomon, McEwen, Dunn, Christopher H. Smith, and Albert Lee Smith.

OPENING STATEMENT OF CHAIRMAN MOTTL

Mr. MOTTL. The subcommittee will come to order. This is the first subcommittee hearing of the second session of the 97th Congress and the first of 1982. I would like to take this opportunity to wish you all a happy and productive new year.

This morning we have scheduled a legislative hearing on H.R. 4326, the Small Business Innovation Development Act of 1981. The bill was introduced by Hon. John LaFalce, and was reported out of the Committee on Small Business on November 20, 1981. Basically, it would amend the Small Business Act to strengthen the role of small, innovative firms in federally funded research and development and to utilize Federal research and development as a base for technological innovation to meet agency needs and to contribute to the growth and strength of the Nation's economy.

At this point let me say I do not believe any of us would question this purpose. However, the provisions of the reported bill would require that each Federal agency with a research and development budget of $100 million or more allocate a percentage of their research and development budgets to small business concerns for innovative purposes. The percentages would be 0.5 percent in the first fiscal year—1982—1 percent in the second, 2 percent in the third, and 3 percent in the fourth and all subsquent years. This becomes a sizeable figure of funds earmarked for this program in the out years—estimated to exceed $1.2 billion in the fourth and future fiscal years.

The VA medical and prosthetic research program is an in-house or intramural research program for studying and improving the care and treatment provided veterans. It is this in-house research

program that attracts and retains many well qualified doctors and clinicians to employment in the veterans medical care system.

The hearings conducted on the physicians' and dentists' primary special pay and incentive pay provisions of title 38 clearly demonstrated that the VA cannot compete with the private sector in the remuneration provided these highly qualified clinicians. Fringe benefits, such as the in-house research opportunities afforded them by the VA, contribute greatly to their recruitment and retention.

A companion, but not identical, bill introduced in the Senate, Senate bill 881, by definition would exclude inhouse research from the provisions of that bill.

We plan this morning to hear our distinguished witnesses and immediately following their testimony, we will go into a markup session. The reason for urgency is that this bill has been sequentially referred to the Committee on Veterans' Affairs for a period ending not later than March 1, 1982. After we mark it up today, it will be referred to the full committee for consideration at its first hearing on February 17, 1982.

Before I call on our first witness this morning, I would like to recognize the ranking minority member, the Hon. John Paul Hammerschmidt, for any opening comments he might care to make.

Mr. Hammerschmidt.

STATEMENT OF HON. JOHN PAUL HAMMERSCHMIDT, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ARKANSAS

Mr. HAMMERSCHMIDT. Thank you, Mr. Chairman. I have no great reservations with this bill except the matter before us this morning. These hearings allow our subcommittee to focus on a rather difficult situation. All of us want to assist small business in becoming more involved in research and development by the Federal Government. On the other hand, we need to assure that as we accomplish this worthy objective, that we do no violence to current research in the VA department of medicine surgery.

H.R. 4326 calls for a progressive increase in set asides of research and development money for several agencies in Government. This would occur in agencies having budgets for this purpose of $100 million a year. In VA this would come to $3.5 million in 1985, assuming its research budget remains relatively static.

VA now commits about $102 million of its $128 million research budget to its in-house operation. This money is used mostly to pay salaries and buy equipment and supplies. The Veterans' Administration contracts for outside research are very limited. I am told that in 1981, there were 37 such contracts, 27 with academic institutions for analysis of very technical medical problems, and 20 were with other parts of the private sector for the same reason. These latter contracts amounted to only about $1 million.

The other body, as you said, Mr. Chairman, in its consideration and passage of S. 881, a companion bill to H.R. 4326, specifically excluded internal research from its provisions. It might be in order for us to do the same thing. This would not harm the basic purpose of the bill, which is to assist small business in other kinds of research and development.

VA's research program is primarly patient oriented on a day-to-day basis. It is nationwide in scope. The operation is closely monitored through a very strict system, whereby only the best and most promising research projects are approved and funded.

This program has played a most important role in recruitment and retention of VA's physicans and the quality of VA medicine has been greatly improved because of it. H.R. 4326 in its current form would require a very good internal operation at VA to be partially contracted out to small business.

I trust that our witnesses this morning will tell us the effect that such contracting would have on research at VA. If, in fact, the program is to be adversely affected, then we should amend the bill as I have indicated.

Mr. Chairman, I look forward to hearing from our witnesses this morning. VA, as you know, has an admirable research record. Its people have been given every kind of research award, including two Nobel Prizes. Their program is a good one. I am confident that the support of it by the Congress will continue as it has in the past.

Thank you, Mr. Chairman.

Mr. MOTTL. Thank you, Mr. Hammerschmidt, for your excellent statement.

This morning we have representing the Small Business Administration, Michael Cardenas. Michael, would you come forth and we look forward to hearing your testimony here this morning. Michael Cardenas is the Administrator of SBA, and we welcome you here this morning and, as I stated before, we look forward to your statement.

Your entire statement will be submitted into the record without objection,[1] and if you would like to summarize or you may proceed as you deem fit, Mr. Cardenas.

STATEMENT OF MICHAEL CARDENAS, ADMINISTRATOR, SMALL BUSINESS ADMINISTRATION, ACCOMPANIED BY ROBERT McDERMOTT ASSOCIATE ADMINISTRATOR, PROCUREMENT AND TECHNOLOGY ASSISTANCE

Mr. CARDENAS. Fine, thank you, Mr. Chairman.

I would like to introduce my Associate Administrator in charge of Procurement and Technology, Mr. Robert McDermott.

Mr. Chairman and other members of the subcommittee, I am pleased to be here today to testify on H.R. 4326, the Small Business Innovation Development Act. President Reagan has endorsed the counterpart Senate bill 881, that the Senate has passed by a vote of 90 to 0.

I would like to request that a copy of this letter of endorsement be entered into the record.

Mr. MOTTL. Without objection, it will so be entered into the record.

[The letter appears on p. 27.]

Mr. CARDENAS. I am pleased to join the President in endorsing Senate bill 881. For reasons that other witnesses will discuss in

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[1] See p. 25.

greater detail, the Administration opposes those parts of H.R. 4326 that deviate from S. 881.

WHY SENATE BILL 881 IS NEEDED

I should like to use my allotted time primarily to discuss the need for this legislation. The concept is straightforward. Under S. 881 Federal agencies with R. & D. budgets of $100 million and over would allocate 1 percent of these resources for small business innovation research programs. Such programs would have three phases, as follows:

Phase I would determine the scientific and technical merit and feasibility of ideas submitted to the Small Business innovation research program;

Phase II would further develop the proposed idea to meet the particular program needs;

In Phase III, non-Federal capital would pursue commercial applications of the research and development.

I find the case for this legislation compelling, Mr. Chairman. It rests on three sets of circumstances that are different, interrelated, and important:

First, American productivity decline and the challenge from abroad. The American economy faces a serious challenge from abroad. Productivity growth has fallen and lags behind levels achieved in Europe and Japan. We face a growing challenge to our once dominant position in technological innovation from Japan, from Germany, and from other countries all over the world. Technological innovation is critical to economic growth, productivity, the control of inflation, and our ability to remain competitive in the world marketplace.

Of nearly 1,000 chief executives recently surveyed, 76 agreed that there has been a damaging overemphasis on short-term profits.

In this part of my testimony, I would also like to include as part of the record references made by footnotes in my testimony.

The role of small business in innovation has been well documented:

Relative to the number of people employed, small firms produce 2.5 times as many innovations as large firms. In addition, small firms bring their innovations to market faster than large firms.[1]

Small firms accounted for almost half of major U.S. innovations between 1953 and 1973. The ratio of innovations to sales is about one-third greater in small firms. The ratio of innovations to R. & D. employment is 4 times greater. The cost per R. & D. scientist in small firms is only half that found in large firms.[2]

Of 61 important inventions and innovations of the 20th Century, over half came from independent inventors or small firms.[3] Of 149 inventions in the aluminum industry, major producers accounted for only 1 in 7[4]. Of 13 major innovations in the American steel in-

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[1] Gellman Research Associates, "The Relationship between Industrial Concentration, Technological Innovation, and Firm Size," forthcoming.

[2] Ad Hoc Interagency Panel, OFPP, "Small Firms and Federal Research and Development," (Rabinow report), 1977.

[3] Jewkes, J. et al. "The Sources of Invention." St. Martin's Press, 1958.

[4] Peck, M.J. "Inventions in the Post War Americna Aluminum Industry", in the Rate and Direction of Inventive Activity, National Bureau of Economic Research.

dustry, 4 came from European companies, 7 from independent inventors and none came from American steel companies.[5] Of seven major inventions in the refining and cracking of petroleum, all were made by independent inventors.[6]

These are not trivial innovations we are talking about, Mr. Chairman. I have included in the testimony a long list of innovations that came from small business. Included, of course, are those very common and close to us, the automatic transmission, the jet engine, the FM radio, power steering, the Polaroid camera among many others.

The point is unmistakable. Significant innovations are more likely to come from small businesses and independent inventors than from the large, institutionalized research laboratory. The reasons are many. In the small business there can be a more creative environment. Rules are less formal. There is no large bureaucracy to contend with. The boss is typically the person with the drive to be innovative.

Frequently the heads of such small innovative firms have left universities or large corporations in order to strike out on their own and run their own enterprises. Incentives are greater: There is a sense of creating an organization and personal involvement with the innovation.

People work longer and harder. There is not the intense pressure for short-lived investments with quick cash payoffs that is found in big business. Indeed, the whole purpose of innovative small firms is to make and market the technological breakthroughs that will enable them to become large firms.

Based upon the foregoing evidence, Mr. Chairman, I hope that we can dispel two widespread but untrue stereotypes. The first is that nearly all new inventive concepts come from the research labs of large universities or large corporations. The second is that the small business firms we are talking about are simply the research equivalent of a mom and pop grocery store.

Regarding the Federal Government's attitude toward research and development of small businesses: In the face of declining American technological superiority and the documented role of high technology small business, what has been the Federal Government's attitude toward supporting small business efforts at technological innovation?

Well, back in 1904 the Federal Government declined a small business' offer to develop an innovation for Governmental use. Before the Government would spend a dime, the device must have been brought to the stage of practical operation without expense to the U.S. Government.

In other words, no R. & D. for small business. The small business in this example was owned by Wilbur and Orville Wright, and their innovation was the airplane.

Without exaggeration one can safely say that the Federal Government's attitude has not changed much in the past 80 years.

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[5] Hamberg, D., "Invention in the Industrial Research Laboratory," Journal of Political Economy, April, 1963.

[6] Enos. J.L., "Invention and Innovation in the Petroleum Refining Industry," in Rate and Direction of Innovation

In a major study on invention in the industrial research laboratory, Daniel Hamberg concludes that:

> Without any careful consideration, the laboratories of the large industrial corporations have been receiving all the accolades and most of the support.
>
> Although it appears that the bulk of major inventions originate outside these laboratories, particularly in the work of independent inventors and small-and medium-size firms, these sources have been relatively neglected and their potential contributions virtually ignored—at least in our formal policies. It seems clear that future efforts to foster technological process must cease this neglect and develop ways of supporting these wellsprings of fundamental advances in the arts.[1]

Despite small businesses' well documented success in the innovation field, its 40-percent-plus share of GNP, and its job creation ability, small business has received less than 4.1 percent of the Federal Government's R. & D. budget. Only 8.1 percent of the proportion awarded as contracts goes to small business. The reasons for small businesses' low participation are many.

Complex regulations place a premium on attorneys, accountants, and procurement specialists—luxuries a small business cannot afford. We are aware of many small business operators who never bother to try because of the paperwork and regulatory barriers. Additionally, in many instances small R. & D. firms refuse to compete with large industry and nonprofit institutions.

Frankly, complex regulations also serve as a disincentive for agency officials. Dealing with small firms requires more patience and guidance. It is simply easier to work with the large firms. And a bias in favor of large firms can exist when awarding R. & D. contracts. There is a tendency on the part of contracting officials to consider awards to large well-established firms "safer" than to small firms.

We have made substantial progress toward eliminating the obstacles standing in the way of innovation. The last Congress removed some of those barriers. Public Law 96-517 was the first patent system reform in many years. Among the reforms were improvements in small businesses' ability to retain title to patents developed with Federal funds.

Public Law 96-477, the Small Business Investment Incentives Act, should improve the opportunities for small businesses in the high technology field to raise capital. Public Law 96-354, the Regulatory Flexibility Act; Public Law 96-481, Equal Access to Justice; and Public Law 96-511, the Paperwork Reduction Act, should all help reduce the regulatory burden imposed on small companies by the Government.

Finally, the Economic Recovery Tax Act of 1981 Public Law 97-34—will provide an incentive to business to increase their own R. & D. expenditures. What remains is improving small businesses access to federal R. & D. budgets.

Regarding what the Small Business Innovation Research Program would accomplish. For all the foregoing reasons, the administration is supportive of efforts to create an environment in which the talent of the small business sector can be better utilized in the promotion of innovation. Let me briefly discuss with you what S. 881 would accomplish.

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[1] Hamberg, "Invention and Innovation," *op. cit.*

For the Government—an R. & D. collaboration with the most innovative sector of the economy. The SBIR program insures that money will be spent on projects that contribute to the Government's specific R. & D. needs. The SBIR program would not change the current mission of any federal agency.

Regarding for high technology R. & D. firms—a fair chance to compete for Federal R. & D. procurements—through regular rather than sporadic solicitations, greatly simplified paperwork requirements, and seed money. The latter is very important.

Small high-technology firms typically do not have sufficient cash flow to finance the early stages of productive development, which is sometimes referred to as the "proof of the concept stage."

Outside capital is needed. But such firms are typified by a high debt to equity ratio, which limits the amount of outside capital that can be raised through conventional resources. The venture capitalists will usually not invest in such firms until a prototype of the product has been developed. Thus there is a gap in our system for financing innovation: no seed money for small high-technology firms. This gap would be at least partially filled in by the passage of S. 881. And finally—for the American economy—the legislation would provide a shot in the arm. At a time when the American ability to compete in the world marketplace is under serious attack, this legislation would open up opportunities for forward-looking, innovation-minded small firms to create new markets and new jobs.

The administration therefore strongly supports S. 881 as passed by the Senate.

I understand that members of this committee have concerns about the role that the Veterans' Administration might play in a small business investment research program. Such concerns are based, I believe, on the fact that most the VA's research is conducted by VA personnel and that very little is contracted out. The Senate bill recognizes this difference. The base for the 1-percent allocation in S. 881 excludes in-house research. As a result, the Veterans' Administration would not set up an SBIR program under the terms of the Senate-passed bill.

Mr. Chairman, this concludes my prepared remarks. I would be pleased to answer any questions.

In concluding my remarks, I would like to make one final plea on behalf of small business and the trials that it faces in today's economy.

I am very heartened and very pleased to report that in my extended visits throughout the country, I find that small business continues to hang in there. They are the ones that have the most faith in the future of our economy.

They have much less employment turnover. It is really large industries that are having the big layoffs by the thousands. As I visit these small communities, many of which have not really received benefits from our programs, I can only say that it is truly the small business community that makes our economy so great and our country so great.

That concludes my remarks.

Mr. MOTTL. Thank you very much for your excellent statement. We certainly appreciate hearing from you this morning.

What percentage of your loans goes to veterans now?

Mr. CARDENAS. I do not know if we have that figure, but we will submit it for the record.[1]

Mr. MOTTL. The record of the SBA has been deplorable in this area in the past. As the chairman of this subcommittee, I would like to urge you to improve immeasurably in that record because our veterans deserve better treatment by the SBA.

Mr. CARDENAS. We do currently have a task force working to improve this record.

Mr. MCDERMOTT. The Administrator recently appointed a task force which consists of all of the associate and assistant administrators. We met four times within the last 4 months with representatives of practically all of the major veterans associations and organizations in the country.

We are putting together what we consider to be a very extensive program for veterans and veterans' organizations. We do not have with us this morning the dollars that have gone to veterans, but we will be happy to provide it.

Mr. MOTTL. We do not want workshops for the veterans, we want money to be lent to them.

Thank you. The Chair would invoke the 5-minute rule so everybody has a chance to proffer questions to Mr. Cardenas. The Chair will recognize the gentleman from Arkansas, the ranking minority member, Mr. Hammerschmidt.

Mr. HAMMERSCHMIDT. Thank you.

Mr. Cardenas, we do not often have a chance to see the Small Business Administrator over here. We are delighted to have you with us this morning.

The only thing that brings you here on this bill is the sequential referral rule where this particular bill has to go the torturous route of about 5 committees across the House.

As a committee, our only interest is seeing that no damage is done, that the VA medical research program continues and as I heard your testimony right up front you are supporting S. 881 which alleviates our fears.

I am not a current cosponsor but there are 150 or 160 cosponsors. I am sure some of them are on this committee. I think I will add my name to that illustrious list as we amend this bill and as I feel we will here this morning.

But I do want to thank you for your helpful testimony. To make the record more concise, on page 4 of your statement, you say such inventions such as penicillin and streptomycin were developed by small investors. I do not want to argue that point, but I think for the record if you would supply the background of these inventions and developments, I think it would make a clearer record for us, because I am told that these were really developed in academic settings under contracts in many instances with the Federal Government. That, I do not think, takes anything away from the merits of the bill, but I think we ought to keep the record straight.

Mr. CARDENAS. I have submitted for the record references to that part of my comments.

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[1] See p. 28.

Mr. HAMMERSCHMIDT. I recognized that in the back and I suppose it would stand on its own. However, if you would expand on it for the record, we would appreciate it.[1] Thank you very much.

Mr. MOTTL. The gentleman from North Dakota, Mr. Dorgan.

Mr. DORGAN. Thank you.

Mr. Cardenas, I appreciated your statement. I think most of us here in Congress support the efforts to give small business a fairer share of the research dollar. I think most of us understand, too, that the productivity in this country and the prospect for economic recovery hinge largely on our ability to provide proper stimulus to the most productive sector of the American economy, the small business sector.

I support this bill and I again think your statement was excellent and appreciate the information you have given us.

I would like to go just a bit afield here if we might since I am a member of the Small Business Committee as well, and since we have the opportunity to have you before this committee. Although this legislation is needed, and it is important for us to have these kind of discussions, as long as the current monetary policy is in place in this country, pursued by the Federal Reserve Board and supported by the administration, these kind of concerns are minuscule as compared to the dominant concerns of both veteran and nonveteran small business owners. And that is high-interest rates.

The first bill I introduced in Congress was called the Paul Volcker Retirement Act. He has not retired yet, but I am still working on it and still hoping.

What are you doing, or do you feel you can do anything, to bring some pressure to bear, on policymakers such as the President, who as Lyndon Johnson used to, put his arm around the chairman and say, here is where we ought to be going.

Mr. CARDENAS. I have been in contact with members of the White House policymaking department, and I have attended meetings with small business organizations that have met with the President, Vice President, and members of the administration. This message has been relayed to them time and time again, not only by myself but by them.

Earlier, I took the initiative. I felt that I could not be critical about it. I had to take the lead for a reduction in interest rates also at that time. We proposed regulations to reduce the interest rate that could be charged above prime. This brought on a great storm by the banking community. I had a meeting with many of them to tell them that it was that I wanted to cut down their profit, but I certainly had to stand up for small business and indicate the stress that they are undergoing.

We will very soon come out with a regulation that will enable us to set interest rates above prime up to 2¾. I felt that, at a minimum, if we could come down to somewhere between prime and that range and we would see a happy medium. I wanted to let the banking community know that we are interested in seeing the best for our small business community. We do not want them to take advantage of their profit line.

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[1] See p. 33.

I felt that was the minimum I could do, and I did it a few months ago.

Mr. DORGAN. Again, I thank the chairman for letting me go a bit afield here, but I guess the percentage above or below prime is not so much the issue because the prime is too high. Do you recognize the grave, grave consequences to the small business sector in this country from the current monetary policy?

I sense that the difference in the way monetary policy impacts on the Mobil Oils of America, versus the Main Street hardware store in North Dakota, is so substantial and possesses such a grave threat to the continuing existence of thousands and thousands of small businesses, that we have to start kicking and fighting to make sure this monetary policy gets turned around.

I do not know what is happening within the administration. I understand it is the Federal Reserve Board policy but I also understand that there is a certain moral situation on the administration that has to be brought to bear also on Mr. Volcker.

I want to leave you with the encouragement that you do everything you can in the administration to bring the attention of—to bring the attention of the administration to the peril of our veteran-owned small businesses are facing because of this tight money policy.

Mr. CARDENAS. I am sure that the Chief Counsel for Advocacy and myself will continue with that fight.

Mr. DORGAN. I thank you for your testimony. I tend to agree with it and think we are on the right road with respect to small business research set-asides.

Mr. MOTTL. Thank you, Mr. Dorgan.

I may also add that I had introduced a resolution asking for the resignation of Mr. Volcker and you might ask the White House if they would endorse that resolution. [Laughter.]

The gentleman from Indiana, Mr. Hillis, do you have any questions?

Mr. HILLIS. I want to thank you for coming up this morning and giving us the advantage of having your testimony on this bill. Many of the problems, as I remember them concerning the relationship of this committee and SBA are not of your making or ours, but historically, as we have seen different problems in other areas arise, and we try to solve them by saying your agency, maybe other agencies, have to give priority to this group or that group, and particularly in your case, it was minorities, women, and granting of loans encouraging the establishment of new businesses and this sort of thing.

The veterans just kind of each time slipped down a rung on the ladder, until finally, although there was some Federal directive that veterans be given special attention, too, they had become submerged, down in the pool, so to speak, because of national focus on other problems.

I think all we are asking here is that veterans of this Nation get a fair break and that they get an equal opportunity because your lending pool of funds is pretty small when you have to spread it across all of the small businesses and the applications you have throughout the country.

What we are asking is if the veteran who has given part of his time and maybe part of his life and his limb, to make it possible that he may have a chance to prosper in our society, can get a fair shot with the SBA as well as other Government programs. I think we established, that principle at least 1 year ago or 2 years ago, as I recall.

I think all we are asking the agency is to carry forward with that now. I think you understand this, do you not?

Mr. CARDENAS. I understand well.

Mr. HILLIS. Going to the point that Mr. Dorgan was just making on the problems with fiscal policy, we are all aware of the tremendous burdens that high interest rates have placed on the entire business community, in particular the small businessman. But certainly, it would appear to me that in the processes that we are going about for economic recovery in this country, the economic recovery act, that the small businessman will prosper by that as the economy begins to turn around.

Do you not see that being an even-handed application throughout the nationwide business community? There has been so much criticism that that is oriented strictly for big business. But do you not see this—would you join with me in the observation that this will have an effect on Main Street and the hardware businesses and small businesses of this country as well?

Mr. CARDENAS. Very definitely.

Mr. HILLIS. Can you expand on that. I would like your opinion how you see that.

Mr. CARDENAS. In my travels it is very enlightening to see and hear that small business does acknowledge they have much to gain in the future and they see a benefit in the economy recovery program. Otherwise, I do not think they would be hanging in as tight as they are.

Mr. HILLIS. My point is they are going to benefit from lower tax rates, too. And they are certainly going to benefit from a reduction in inflation, which has been one of the problems that has hurt all of our society.

Mr. CARDENAS. They are still most concerned, of course, about the interest. Prime has been a very vague figure, anyway. I do not think there is any question but that small business community retains its great optimism for the future.

Mr. HILLIS. I agree with your earlier statement as small business prospers, I think our country will prosper. All we are asking this committee is that the veterans population of this country get a chance to participate through your agency in the small business affairs of our country.

Mr. CARDENAS. It is only fair.

Mr. MOTTL. Thank you very much.

The gentleman from Pennsylvania, Mr. Edgar.

Mr. EDGAR. Thank you very much. I apologize for not being here at the beginning of your statement. Just one comment and then a question.

A few years ago someone from my congressional district was elected President of the National Association of Research Development, Small Business Group. I am not sure exactly of the title of the group. But they invited me to come and to listen to some of

their concerns. I think that this legislation has outgrown from that concern. The point they were making was in many of the Government contracts we get fascinated with either large industry, or with universities and colleges who are nonprofit and we get very frustrated at trying to see how the small innovative, small business person, can have access given the paperwork and pressures that are on him.

I think you make a point in your statement in defense of this legislation, that there is a need to set aside some percentage, in this case 1 percent, for those profitmaking innovative small business people who, in fact, have invented a lot. They went through a litany of inventions that would not have taken place had there not been somebody in a garage someplace trying to sort through the complications of our society and come out with some innovation.

I am troubled with the commitment we made to our defense budget primarly because much of the research and technology dollars spent over the next 10 years will go into defense which is not a bad idea, but there are an awful lot of areas of human life that will not get the adequate dollars and commitments.

The question that I have of you is, given the nature of why the Veterans' Administration moved aggressively in the area of particularly medical research, do you see the value of why a separation might be made between the kind of research that takes place in a hospital to attract physicians to the veterans' medical system and the kind of innovative small business and large business and educational research that might take place in terms of auxiliary research around Veterans' Administration?

Do you see the difference that might exist if the original purpose of some of the research was to attract physicians to the veterans' hospital? Is it possible that we would be diminishing that purpose?

Mr. CARDENAS. I would have to give that some serious thought but I would say there could be a need for keeping that separate. You definitely have a specific specialty to the health service. Of course my heart is very close to that since I do have a daughter in medical school.

Mr. EDGAR. I do not think it is bad for us to find a small business inventor someplace who might be developing a better artificial limb or an artificial something or a new device technique. But there is some concern that we not diminish the very good quality of research within the medical system.

Our system won a couple Nobel Prizes a couple years ago for its research. While 1 percent is not a lot of money, it is when money is diminishing at an accelerated rate in all of the research areas.

Thank you very much.

Mr. MOTTL. Thank you very much, Mr. Edgar.

The next, the gentleman from New York, Mr. Solomon.

Mr. SOLOMON. I do not really have any questions of this gentleman. I do have some later on. I am sorry Mr. Dorgan left because I wanted to ask him to yield a minute ago when he was talking about the high interest rates that are prevalent now through this administration. He said he is sponsoring the Paul Volcker retirement act and I am a supporter of that act as well.

But I would just like to point out he also mentioned something about the administration ought to be using its moral sway toward

reducing interest rates. I was going to point out to him that President Reagan certainly has done that. If I recall the interest rates when we took office were 21 percent. I think they are down around 15 percent or so now. I want to ask you to pass along to the President we appreciate his moral sway in that direction.

I do not have any questions on this except I may not be able to be here for the markup. I understand that you have some interest in the intramural medical research program and perhaps exempting that. If I am not here, I lend my support to that amendment, I have some concerns. I am a cosponsor of this legislation and I think it will solve many of our concerns.

Mr. MOTTL. Mr. Daschle.

Mr. DASCHLE. I have no questions.

Mr. MOTTL. Thank you very much.

The Gentleman from Alabama, Mr. Smith.

Mr. ALBERT SMITH. I have no questions.

Mr. MOTTL. Thank you, Mr. Smith.

The Gentleman from Alabama, Mr. Shelby.

Mr. SHELBY. No questions.

Mr. MOTTL. The gentleman from New Jersey, Mr. Smith.

Mr. CHRISTOPHER SMITH. I first of all would like to commend the administration and you, Mr. Cardenas for your support of 881 and to reenforce your argument why in favor of it when you were talking about the proof of concept stage.

I have had some meetings with small entrepreneurs in my own State and in the Fourth District who had a difficult time in high technology areas of getting past that stage and some of them had some very good ideas in the area of computer chips and the like, and they could not get past that initial funding stage. So I think this could be a real help to them.

Your colleague referred to the four meetings with veterans groups that have occurred on the SBA and how both the vets and the SBA can work together. I was wondering if there were any concrete suggestions or suggestions to come out of these meetings and how that will be made known to us. Will there be a report or will it just be done, you know, in letter form or what?

Mr. CARDENAS. I am sure there will be a report. But I will refer that question to Mr. McDermott.

Mr. MCDERMOTT. Congressman, we are at the moment just in the phase of putting together various recommendations of about five subcommittees; a subcommittee on how we can improve the financial situation with veterans; a subcommittee on how we can improve the procurement outlook for veterans; dollars from Government contracts; what we can do for veterans as far as increasing their participation in our management assistance programs and so on.

Within the next 3 to 4 weeks we will have an agency position to submit to the Administrator, which hopefully will go a long way to correcting some of the things that perhaps we have not done in the past for veterans.

Mr. CHRISTOPHER SMITH. So it is planned within 3 or 4 weeks?

Mr. MCDERMOTT. Yes.

Mr. MOTTL. Thank you very much.

The gentleman from Tennessee, Mr. Boner.

Mr. BONER. I have no real questions.

Mr. MOTTL. Thank you, Mr. Boner.

Mr. Cardinas, Mr. McDermott, we appreciate the opportunity to proffer some questions to you this morning and all I would like to echo again is that please do more for the veterans in giving them more money so they can be innovative businessmen in the future.

Mr. CARDENAS. Well taken.

Mr. MOTTL. Thank you very much.

Next, we will have a panel, it is Dr. Hollis Boren, Assistant Medical Director for Research and Development of the VA. Dr. Boren will be accompanied by Mr. Clyde Cook, assistant deputy administrator for Procurement and Supply. Dr. Howard Green, chief of staff, VA Medical Center, White River Junction, Vt., and if Dr. John Cooper, president of the Association of American Medical Colleges would also come forth, this will be our distinguished panel here.

Why don't we hear from you at the outset and your entire statement and that of the colleagues at the witness table will all be submitted in their entirety to the record without objection.

You may proceed as you deem fit and we certainly appreciate it if you can summarize your statements for us.

STATEMENTS OF HOLLIS G. BOREN, ASSISTANT CHIEF MEDICAL DIRECTOR FOR RESEARCH AND DEVELOPMENT, VETERANS' ADMINISTRATION, ACCOMPANIED BY CLYDE COOK, ASSISTANT DEPUTY ADMINISTRATOR FOR PROCUREMENT AND SUPPLY, VETERANS ADMINISTRATION; HOWARD GREEN, CHIEF OF STAFF, VETERANS ADMINISTRATION MEDICAL CENTER, WHITE RIVER JUNCTION, VT., AND JOHN COOPER, PRESIDENT, ASSOCIATION OF AMERICAN MEDICAL COLLEGES

STATEMENT OF HOLLIS G. BOREN

Dr. BOREN. Thank you, Mr. Chairman, and members of the committee. I appreciate this opportunity to testify before the subcommittee regarding the VA's views on H.R. 4326, the Small Business Innovation Development Act of 1981.

Mr. Chairman, as has been mentioned, the Senate has passed a bill, S. 881, which the VA supports with a similar purpose to H.R. 4326. Since most VA research and development projects are conducted in-house, S. 881 would not adversely affect the VA's research program since the Senate formula exempts in-house research.

For this agency, the Senate bill would require the research and development program to establish set-aside goals for small businesses that would continue existing levels of contracting with small business concerns.

Additional goals would not be required until total research and development expenditures reached a total of $300 million in a year.

Within the Veterans' Administration Department of Medicine and Surgery, research and development is conducted in support of the mission to provide for the health care needs of veterans.

In fiscal year 1982, approximately $128 million was appropriated for the conduct of research and development at 129 Veterans' Administration hospitals where approximately 4,100 investigators are engaged in some 5,200 research projects.

H.R. 4326 would require agencies having research and development budgets, including money expended for intramural research, in excess of $100 million a year, to establish a small business set-aside research program. This set-aside would be from existing appropriations and for the VA could amount to as much as $3.5 million in the third year following enactment of this bill.

Mr. Chairman, there are several reasons why this legislation would be detrimental to the VA's research and development program and why the Veterans' Administration strongly opposes enactment of H.R. 4326.

The VA conducts a preponderance of its research and development projects as an intramural effort by utilizing clinical investigators employed at least five-eights of their time by the VA within its VA medical centers.

A unique aspect of high-quality research by VA health care providers, in contrast to extramural investigators, is that VA health care providers are intimately involved in veteran patient care.

As such, they have demonstrated a very special commitment to quality medical care for the veteran patient. The natural result of this commitment is the desire to improve veteran patient care through an active involvement in research and development.

The establishment of a dollar goal based on total research expenditures, including intramural research, would artificially inflate the amount to be set aside for an SBIR program by the VA. This would result in a greater percentage of the VA's already constrained research and development budget being set aside than is actually available for contracting purposes.

H.R. 4326 would also result in a reduction of availability of funding for clinician-researchers in VA medical centers. As a result of the need to reduce Federal expenditures, the fiscal year 1982 levels of appropriations and FTEE have already been reduced below the fiscal year 1981 levels.

Consequently, on the basis of an analysis of priorities, we are unable to fund all scientific proposals by VA health care providers which have been judged scientifically meritorious by a national merit review process.

A further reduction in moneys for intramural research would mean that high-quality research of VA clinician-researchers would, of necessity, go unfunded.

In accordance with agency procedures, a decision by the VA to pursue a research and development project is made on the basis of a merit process which each review proposal must undergo prior to approval.

Projects proposed for funding are reviewed by national VA merit review boards. The boards review and prioritize each proposal for scientific merit and relevance to the health programs of veteran patients.

Placing additional requirements on our program would probably have the effect of removing a percentage of our research effort from this competitive process. In the area of medical research that

is directed at specific health problems, we believe that scientific merit, relevance and productivity should be the only factors considered in competing for scarce research resources.

For the reasons which have been enumerated in this presentation, the VA favors the enactment of the Senate version of the bill, S. 881, rather than the enactment of H.R. 4326.

Mr. Chairman, we will be pleased to answer questions from you or other committee members regarding our research and development program and the Small Business Innovation Development Act of 1981.

[The prepared statement of Dr. Boren appears on p. 36.]

Mr. MOTTL. Thank you very much, Dr. Boren. We are going to hold questions until we have all of you offer your statements and then we will question you.

Next we will hear from Dr. Howard Green, chief of medical staff. Welcome, Dr. Green.

STATEMENT OF HOWARD GREEN

Dr. GREEN. Mr. Chairman, members of the committee, I appreciate the opportunity to represent my colleagues in the field on this important piece of legislation.

I would like to summarize my statement in the interest of time, since you have my full statement.

Mr. MOTTL. Your entire statement will be submitted to the record without objection and you may summarize.

Dr. GREEN. We oppose H.R. 4326 in its current form because it attacks the philosophic base on which VA funds were appropriated for research 36 years ago.

It is, in essence, a repudiation of 36 years of successful policy. The purpose of the legislation was to help us to recruit well-intentioned and qualified physicians to the Veterans' Administration and to attack those ideas in research unique to veterans. This has occurred.

The trend of the appropriation, in our view, is disturbing in that the effect on the field is a constant shrinkage of our research enterprise. There are some unique aspects of VA research that have to be addressed, one of which is that it is probably the only bastion left where cooperative studies can be easily carried out.

The contributions of these research endeavors has clearly been an asset to the capital formation of this country.

In addition, we produced research scientists of caliber for the nation. Dr. Yalow and Schally, the Nobel prize winners, are the pinnacle of that group.

In addition, the central base on which all research rests is investigator initiated in research, which creates basic ideas, which, indeed, is the capital on which our whole Nation rests.

I cannot accept, in our current situation, a set-aside for small business from the VA internal research appropriation. I would hope the committee would support this and would hope that you would reject the bill in its current form.

Thank you, Mr. Chairman.

Mr. MOTTL. Thank you very much, Dr. Green.

[The statement of Dr. Green appears on p. 40.]

Mr. MOTTL. Next, we will hear from the distinguished Dr. John Cooper, president of the Association of American Medical Colleges. Dr. Cooper, it is a pleasure having you here this morning.

You may proceed as you see fit. If you would like your entire statement submitted into the record without objection, it will be done so and if you would like to summarize, you will proceed.

STATEMENT OF JOHN COOPER

Dr. COOPER. Thank you. I would like our statement incorporated into the record.[1]

I would like to thank this committee for permitting us to testify on H.R. 4326, specifically since the Small Business Committee in the House was unable to accommodate a representative from the medical schools on its witness list when the national hearings were held on this proposal.

The association does speak for the faculty, students, administration of the Nation's 126 academic medical centers. We have a very deep concern, one, about the bill generally and secondly, about its relationship to the VA medical research program.

I would like to, if I might, just talk very briefly about the generic problems that we have with this bill and then about the particular problems as far as it relates to the VA.

The bill is called the Small Business Innovation Development Act of 1981. If you look at this word innovation, it really is a generic phrase used in the act to cover two areas: One, the support of basic research to be done by small business and second, the assistance in getting products based upon the cutting edge of scientific knowledge to the market.

I would like to take you through these very briefly. With regard to basic research, there is now, with the changes in regulations for the Public Health Service, no barrier to small businesses competing within every agency of the Federal Government, on the same basis as any other investigator, with the exception of the VA, which does not have an extramural program.

Further, the same patent rights apply. Title will devolve to the small business and there is no reason that a special set-aside is needed.

Actually, what they are asking for on the basic research aspect, then, is an entitlement program, a program which entitles them to a certain amount of money. And, as you know, entitlement programs have caused some problems in this Congress, the ones that have been passed in the past.

Actually, if one looks at the interest of small business in Federal grants, it has been very low, and I will only talk about biomedical research, because that is the only area I know.

In obtaining grants, if one looks at the NSF, which set up a special so-called program for small business, one finds that in 1977, only 0.25 percent of all of the grant applications for research support in the life sciences came from business of any size.

It rose to 0.63 percent in 1971. The success rate of those grant applications was 42 percent in 1977 and it fell to 33 percent in

[1] See p. 54.

1981—percentages very close to the success rates of not-for-profit applicants.

We can see, therefore, that we agree with Mr. Hammerschmidt that we don't need a separate program. The statements that are made in the bill report which claim, as I think Mr. Hammerschmidt questioned, that Dr. Banting, who discovered insulin and worked at the University of Toronto in Canada was a small businessman is some stretch of the imagination.

Further, streptomycin was discovered by Dr. Waksman, who was a professor at Rutgers University and penicilin was discovered by Dr. Fleming, who was at that time at Oxford University.

None of these, I think, would qualify as small businessmen. If they are small businessmen it is because universities are a collection of small entrepreneur investigators who really act fairly independently within that institution.

It would appear from what we have seen in NSF, which also funds biological research, that there is no deep interest in small business in this particular area.

Now, with regard to bringing the products to market. It seems to me that we have good evidence that entrepreneurs seem to be having very little difficulty in funding their activities from equity capital, which they can raise on the stock market.

I think Genentech and all of those companies which have come on the market and are sold out before the thing can be available generally to investors indicates there is no problem for good ideas to be supported from earnings, borrowings or equity capital. There will be, in the testimony before Mr. Fuqua's committee tomorrow, representatives of small businesses that started out as small businesses in "Silicon Valley" in California that will testify there is no need for the government to intervene in helping small business bring good products to market, that the equity capital is easily available and there has been no problem in that area.

Even if there are some market imperfections in this area, it seems more likely that tax incentives and other kinds of subsidies would be a more appropriate way for businesses to bring their product to the market.

One other point I would like to make is about the VA. I think it has already been said that 102 medical schools are affiliated with 182 of the 241 Veterans Administration health care facilities.

This partnership, which was started in 1946, has been an extremely valuable one to the VA and medical school. For the VA, it helped recruit and maintain high-quality, competent staff.

For the medical schools, it has permitted expansion of our class size to meet the country's needs for position, both in education and training at the undergraduate medical school level, and in residency training.

And I think it is also clear, as Dr. Green has said, that the established research program is an important part in maintaining this effective partnership between the medical schools and the VA.

It is an intramural program. It is a program which has helped recruit and retain high-quality investigators and, as Dr. Green has said, two of those investigators recently have been awarded the highest prize a scientist can aspire to, the Nobel Laureate.

It is a good program. It helped fulfill the purposes of the affiliation agreement. There has been a decrease year by year in the support of the research program in the VA, as a matter of fact, between 1977 and 1981, the research budget grew, only at the rate of 6.5 percent a year, far below the inflationary costs, that is, therefore, a reduction in effort. It dropped very steeply from 141 million in 1981 to 128 million in this year. This was a 9.3 percent drop in current dollars.

On top of this, there is a threat that a mandatory pay increase for the Veterans Administration may have to come out of these programs. All I am pointing out is that this program has already been squeezed and to open this program up to outsiders will certainly thwart the original purpose of this program.

In summary, I would like to say what we and the presidents of universities and a lot of other organizations are going to recommend, one, that the present bill, either the Senate or House bill, not be enacted; and that Small Business Assistance Offices be established in each agency to help small business identify opportunities and help them prepare proposals.

This does not apply to the VA. We believe that the VA should not be incorporated into any bill.

The present House and Senate bill do not provide this kind of help and you have heard small businesses complain that this is the principal problem that small business has in getting proposals ready and knowing what kind of programs are available for them to apply for.

We think an office in these agencies could identify the programs, which apparently the Small Business Administration cannot do, and help them in the preparation of their proposals.

The bills do call for simplification of application. I think that the Congress should not agree to any method to distribute public moneys which does not have enough details in the proposal to let the agency meet its responsibilities in guarding public funds, the use of public funds.

This office, I think, would be helpful to small business in getting more access to the funds, which they can now do in basic research on the same basis as anyone else.

By the way, in universities, each one of these investigators is in a sense a small businessman or small entrepreneur that writes his own proposal. He does not have a large office writing proposals for him. He does it himself.

If the Congress insists on a special program for small business, we would recommend that the Congress authorize and appropriate these programs for each agency in the same way as all other programs.

We believe this should have the scrutiny of the Congress each year and should not be an entitlement program. Those are the approaches that a group from higher education is going to recommend, both to this committee and to the other.

For this committee, we recommend, in any event, that the VA be exempted from any bill that passes the Congress because of the special character of its research programs.

Thank you, sir.

Mr. MOTTL. Thank you very much, Dr. Cooper, for your fine statement.

[The statement of Dr. Cooper appears on p. 54.]

Mr. MOTTL. The Chair will recognize the gentlelady from Massachusetts for any questions she would like to proffer to the distinguished panel.

Ms. Heckler.

Mrs. HECKLER. Well, Dr. Cooper, since you are here, I can't resist asking what the progress of the medical colleges is on the subject of the introduction of geriatrics. When this committee studied geriatrics and passed the bill several years ago, we found out more than half of the medical colleges in America did not have courses in geriatrics.

If you could supply the information for the record, if you like.

Dr. COOPER. I would be happy to talk here.

Mrs. HECKLER. If you have the figures, I would be interested to know now.

Dr. COOPER. I can tell you what the association is doing. We have been working with the Administration on Aging to improve and strengthen the long-term geriatric care centers which are being established across the country.

We have just received a large grant from the Pew family foundation in Pennsylvania. We are holding regional conferences on how geriatrics can best be incorporated.

Special courses are not the only way to introduce concern with the aged into medical school. If one looks at preventive medicine, a separate department, one can see that it has not had much influence on the physician's training.

It should be incorporated into the mainstream of education, every course should have a concern with the changes that occur with aging. This is happening in the medical schools, in pharmacology, in physiology, in anatomy, and the thing we really have to push more is in the clinical area, both in the undergraduate program, which is only a small part of the training of the physician, and in the residency program, and that is what we are intending to do.

Mrs. HECKLER. I would like, for the record, the specific list of colleges or the number of colleges that have geriatric training programs, either at the clinical level or in other levels, at the medical colleges in the United States.

Second, I would like a list of the number of medical colleges that have courses in nutrition and I think that would be very valuable.[1]

Dr. COOPER. We would be very happy to provide that, Ms. Heckler. I will also, again, by way of that information, say that nutrition, geriatrics and all of those other things are taught in the regular curriculum courses.

Separate courses really are not the best way to get students educated to train in these areas.

Mrs. HECKLER. Undoubtedly the training has to cover a number of disciplines, but there are a number of very fine medical schools in America that have introduced geriatric courses and I think that the point to be made is that the medical colleges were very slow in

[1] The material requested appears on p. 56.

recognizing that this needed to be done and also the study of nutrition.

They finally have, I think, come to the realization of the graying population. I would like to see the statistics because it bears on what we are doing in this committee.

In terms of the specific bill, Dr. Boren, you seem to feel the Senate version is preferable in terms of the fact it is a 1 percent set-aside with limitations versus the 3 percent which is the House version, is that correct?

Dr. BOREN. Yes, we do favor the Senate bill.

Mr. MOTTL. Thank you very much, Ms. Heckler.

The gentleman from Alabama, Mr. Shelby?

Mr. SHELBY. I have no questions.

Mr. MOTTL. The gentleman from Michigan, Mr. Dunn?

Mr. DUNN. I have no questions.

Mr. MOTTL. The gentleman from Florida, Mr. Mica?

Mr. MICA. No questions.

Mr. MOTTL. The gentleman from Alabama, Mr. Smith?

Mr. ALBERT SMITH. Yes, Mr. Chairman.

Dr. Boren, in the information that you have here about the money that has been spent by Veterans' Administration on research, you cover that in detail and I am sure you have a lot of success stories to indicate the fact or the impact of the money that has been spent over a number of years to justify the continuation of this.

It has been beneficial and you didn't specifically relate to any such results here over the period of time. I know two other gentlemen referred to the two Nobel prize winners. Would you care to relate for the record some indications of successes in the money that has been used by the VA in research?

Dr. BOREN. Yes, sir, I would be glad to. I think that Dr. Green mentioned our cooperative studies. I think it is a matter of record of what these have done since they involved multiple hospital and therapy of tuberculosis to start with, and the compliance of hypertension, on the chemotherapy of schizophrenia and related medical disorders.

These are landmark studies, sir, that have come out of VA research program that have involved multiple investigators and hospitals within our system.

Mr. ALBERT SMITH. What percentage of the money or how much of the money has been used developing prosthetics and in research on prosthetics?

Dr. BOREN. Our R. & D. is at a level of $7 million per year and approximately 30 percent of that budget goes toward the development of prosthetic devices.

Mr. ALBERT SMITH. Thank you.

Mr. Chairman.

Mr. MOTTL. Thank you very much, Mr. Smith.

The Chair would like to thank the distinguished panel for being with us this morning. I think you contributed a lot to these two important bills before us. Thank you very much.

Next we will hear from Mr. James N. Magill, special assistant, national legislative service, VFW.

Your entire statement will be submitted in the record without objection. You may proceed as you deem fit.

STATEMENT OF JAMES N. MAGILL, SPECIAL ASSISTANT, NATIONAL LEGISLATIVE SERVICE, VETERANS OF FOREIGN WARS

Mr. MAGILL. Mr. Chairman and members of the subcommittee, thank you for the privilege of presenting the views of the Veterans of Foreign Wars with respect to H.R. 4326.

My remarks will be brief with the understanding that the text of my full statement will be made a part of the record.

The VFW supports the basic concept of H.R. 4326. We believe, however, that certain research programs should not be included in the small business innovation research program. To be specific, we believe intramural research should be exempted.

If the VA is required to participate in the SBIR program, only those research programs considered extramural should be involved. We base this opinion on the fact that research conducted on veterans in VA facilities should not be open to small business, but continue to be conducted by VA clinical investigators.

Once again, Mr. Chairman, we support small business and the intent of H.R. 4326. We only request that the committee consider limiting the scope of research.

This concludes my statement, I would be happy to respond to any questions you may have.

[The statement of Mr. Magill appears on p. 58.]

Mr. MOTTL. Thank you very much, Mr. Magill, for your excellent statement.

Gentleman from Michigan, gentleman from Alabama, have any questions of the witness?

Mr. DUNN. I have just one.

You suggested other alternatives in your prepared speech when I was reading through it here. Do you have a list of those alternatives?

Mr. MAGILL. In respect, sir, to what we would——

Mr. DUNN. To getting small business involved?

Mr. MAGILL. We think small business could be involved on a level such as with prosthetic research. We believe the protocol for the herbicide exposure study is another example.

Mr. DUNN. I was suggesting actual methods.

Mr. MOTTL. Thank you, Mr. Dunn.

Mr. Magill, we really appreciate you coming forth and doing the excellent job you have always done in the past. Thank you very much for being with us.

Statements for the record have been submitted by the Honorable Berkley Bedell, Congressman from Iowa, also on the Committee on Small Business, the American Legion, Disabled American Veterans, American Vets, the National Institute for Enterprise, Technology.

Without objection, these statements will be included in the hearing record.

This completes our witnesses for this morning. As indicated in the notice of the hearing, the subcommittee will now proceed to mark up H.R. 4326 and report it to the full Committee on Veterans Affairs.

[Whereupon, at 10:20 a.m., the subcommittee proceeded to other business.]

APPENDIX

Prepared Statement of Michael Cardenas, Administrator, U.S. Small Business Administration

Mr. Chairman and members of this subcommittee, it is an honor and a pleasure to be here today to testify on H.R. 4326, the Small Innovation Development Act. President Reagan has endorsed the counterpart bill, S. 881, that the Senate has passed by a vote of 90 to 0. I would like to request that a copy of his letter of endorsement be entered into the record. I am pleased to join the President in endorsing S. 881. For reasons that other witnesses will discuss in greater detail, the Administration opposes those parts of H.R. 4326 that deviate from S. 881.

WHY S. 881 IS NEEDED

I should like to use my allotted time primarily to discuss the need for this legislation. The concept is straightforward. Under S. 881 Federal agencies with R&D budgets of $100 million and over would allocate one percent of these resources for small business innovation research programs. Such programs would have three phases, as follows:

To remain competitive in the world marketplace. According to a Harvard Business School professor quoted last week in a Washington Post series on the decline of American leadership in innovation, "By their preference for serving existing markets rather than creating new ones and by their devotion to short-term returns and 'management by the numbers,' many (American business managers) have effectively forsworn long-term technological superiority as a competitive weapon." This criticism has become widely accepted in the business community. Of nearly 1,000 chief executives recently surveyed, 76 percent agreed that there has been a damaging over-emphasis on short term profits.

2. *The documented role of small business in technological innovation.*—The role of small business in innovation has been well documented:

Relative to the number of people employed, small firms produce 2.5 times as many innovations as large firms. In addition, small firms bring their innovations to market faster than large firms.(1)

Small firms accounted for almost half of major U.S. innovations between 1953 and 1973. The ratio of innovations to sales is about ⅓ greater in small firms. The ratio of innovations to R&D employment is 4 times greater. The cost per R&D scientist in small firms is only half that found in large firms.(2)

Of 61 important inventions and innovations of the twentieth century, over half came from independent inventors or small firms.(3) Of 149 inventions in the aluminum industry, major producers accounted for only one in seven.(4) Of seven major inventions in the refining and cracking of petroleum, all were made by independent inventors.(6)

These are not trivial innovations we are talking about, Mr. Chairman. Just consider for a moment the following list of major twentieth century inventions made by independent inventors and small business: Xerography, DDT, insulin, the the vacuum tube, rockets, streptomycin, penicillin, the cyclotron, the cotton picker, shrink-proof knitted wear, the zipper, catalytic cracking of petroleum, automatic transmissions, the gyrocompass, the jet engine, FM radio, the self-winding wristwatch, the helicopter, power steering, Kodachrome, air conditioning, the Polaroid camera and the ballpoint pen.(7) The point is unmistakable. Significant innovations are more likely to come from small businesses and independent inventors than from the large, institutionalized research laboratory. The reasons are many. In the small business there can be a more creative environment. Rules are less formal. There is no large bureaucracy to contend with. The boss is typically the person with the drive to be innovative. Frequently the heads of such small innovative firms have left universities or large corporations in order to strike out on their own and run

their own enterprises. Incentives are greater: there is a sense of creating an organization and personal involvement with the innovation. People work longer and harder. There is not the intense pressure for short-lived investment with quick cash payoffs that is found in big business. Indeed, the whole purpose of innovative small firms is to make and market the technological breakthroughs that will enable them to become large firms.

Based upon the foregoing evidence, Mr. Chairman, I hope that we can dispel two widespread but untrue stereotypes. The first is that nearly all new inventive concepts come from the research labs of large universities or large corporations. The second is that the small business firms we are talking about are simply the research equivalent of a mom and pop grocery store.

3. *The Federal Government's attitude toward research and development by small business.*—In the face of declining American technological superiority and the documented role of high technology small business, what has been the Federal Government's attitude toward supporting small business efforts at technological innovation? Well, back in 1904 the Federal Government declined a small business' offer to develop an innovation for governmental use. Before the government would spend a dime, the "device must have been brought to the stage of practical operation without expense to the U.S. Government." In other words, no R&D for small business. Mr. Chairman, the small business in this example was owned by Wilbur and Orville Wright, and their innovation was the airplane.

Without exaggeration one can safety say that the Federal Government's attitude has not changed much in the past 80 years. In a major study on invention in the industrial research laboratory, Daniel Hamberg concludes that "without any careful consideration, the laboratories of the large industrial corporations have been receiving all the accolades and most of the support. Although it appears the bulk of major inventions originate outside these laboratories, particularly in the work of independent inventors and small- and medium-size firms, these sources have been relatively neglected and their potential contributions virtually ignored—at least in our formal policies. It seems clear that future efforts to foster technological process must cease this neglect and develop ways of supporting these wellsprings of fundamental advances in the arts." (8)

Despite small businesses' well documented success in the innovation field, its 40 percent-plus share of GNP, and its job creation ability—small business has received less than 4.1 percent of the Federal Government's R&D budget. Only 8.1 percent of the portion awarded as contracts goes to small business. The reasons for small businesses' low participation are many. Complex regulations place a premium on lawyers, accountants, and procurement specialists—luxuries a small business cannot afford. We are aware of many small business operators who never bother to try because of the paperwork and regulatory barriers. Additionally, in many instances small R&D firms refuse to compete with large industry and nonprofit institutions. Frankly, complex regulations also serve as a disincentive for agency officials. Dealing with small firms requires more patience and guidance. It is simply easier to work with the large firms. And a bias in favor of large firms can exist when awarding R&D contracts. There is a tendency on the part of contracting officials to consider awards to large well-established firms "safer" than to small firms.

We have made substantial progress toward eliminating the obstacles standing in the way of innovation. The last Congress removed some of those barriers. Public Law 96-517 was the first patent system reform in many years. Among the reforms were improvements in small businesses' ability to retain title to patents developed with Federal funds.

Public Law 96-477, the Small Business Investment Incentives Act, should improve the opportunities for small businesses in the high technology field to raise capital. Public Law 96-354, the Regulatory Flexibility Act; Public Law 96-481, Equal Access to Justice; and Public Law 96-511, the Paperwork Reduction Act, should all help reduce the regulatory burden imposed on small companies by the Government. Finally, the Economic Recovery Tax Act of 1981 (Public Law 97-34) will provide an incentive to businesses to increase their own R&D expenditures. What remains is improving small businesses' access to Federal R&D budgets.

WHAT THE SMALL BUSINESS INNOVATION RESEARCH PROGRAM WOULD ACCOMPLISH

For all the foregoing reasons, Mr. Chairman, the Administration is supportive of efforts to create an environment in which the talent of the small business sector can be better utilized in the promotion of innovation. Let me briefly discuss with you what S. 881 would accomplish.

For the Government—an R&D collaboration with the most Innovative sector of the Economy.—The SBIR program ensures money will be spent on projects that contribute to the government's specific R&D needs. The SBIR program would not change the current mission of any Federal agency.

For high technology R&D firms—A fair chance to compete for Federal R&D procurements—through regular rather than sporadic solicitations, greatly simplified paperwork requirements, and seed money. The latter is very important. Small high technology firms typically do not have sufficient cash flow to finance the early stages of product development, which is sometimes referred to as the "proof of concept stage." Outside capital is needed. But such firms are typified by a high debt to equity ratio, which limits the amount of outside capital that can be raised through conventional sources. And venture capitalists will usually not invest in such firms until a prototype of the product has been developed. Thus there is a gap in our system for financing innovation: no seed money for small high technology firms. This gap would be at least partially filled in by the passage of S. 881. And finally—

For the American economy—the legislation would provide a shot in the arm.—At a time when the american ability to compete in the world market place is under serious attack, this legislation would open up opportunities for forward looking, innovation-minded small firms to create new markets and new jobs.

The Administration therefore strongly supports S. 881 as passed by the Senate.

I understand that members of this committee have concerns about the role that the Veterans Administration might play in a Small Business Investment Research Program. Such concerns, are based, I believe, of the fact that most of the VA's research is conducted by VA personnel and that very little is contracted out. The senate bill recognized this difference The base for thje one percent allocation in S. 881 excluded in-house research. As a result, the Veterans Administratioin would not set up a SBIR program under the terms of the Senate-passed bill.

Mr. Chairman, this concludes my prepared remarks. I would be pleased to answer any question.

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(6) Enos. J.L., "Invention and Innovation in the Petroleum Refining Industry," in *Rate and Direction of Innovation Activity, op. cit.*

(7) *Technological Innovation: Its Environment and Management,* Department of Commerce, 1967. *Report of the Panel on Invention and Innovation.* (The Chappie Report)

(8) Hamberg, "Invention and Innovation," *op. cit.*

THE WHITE HOUSE,
Washington, D.C., October 6, 1981.

Hon. WARREN RUDMAN,
United States Senate,
Washington, D.C.

DEAR WARREN: I would like to express my support for S. 881, the Small Business Innovation Research Act.

Your concern that small firms be able to participate equitably in Federal research and development is shared by this Administration. In the long run, all sectors of the economy are likely to benefit from the increased competition and research incentives your legislation would provide.

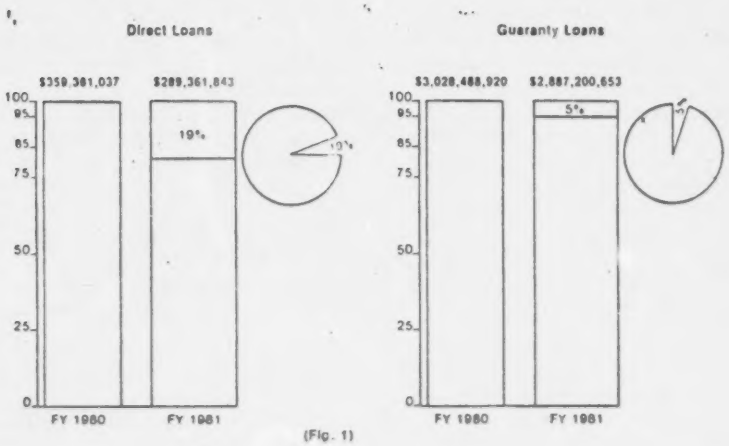
I congratulate you for the leadership you have shown in advancing the interests of those small businesses which are the job-producing lifeblood of our economy.

Sincerely,

RONALD REAGAN.

SBA LOANS TO VETERANS DURING FY 1981 - AN ANALYSIS

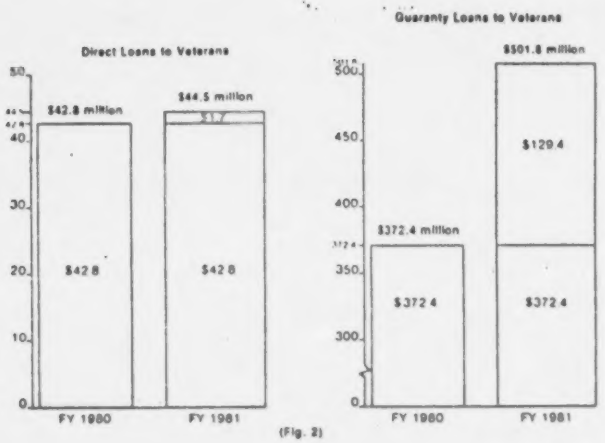
The Small Business Adminstration experienced an overall reduction in total loan dollars in FY 1981.



(Fig. 1)

During FY 1980, the Agency made 12 percent of its total loans to veterans. The SBA set a target of 15 percent of total loans to veteran loans during FY 1981. On January 24, 1980, former Deputy Administrator, William H. Mauk, Jr., had targeted $25 million (about 7 percent) of FY 1980 direct lending funds to Vietnam-era veterans, however, inclusions of this objective in the FY 1981 Strategy Statement was the first time that the SBA Operating Plan included a national veteran lending objective. The 15 percent figure was taken from the recommendations of the Veterans in Business Section of the White House Conference on Small Business.

The SBA exceeded the target of 15 percent of its loans to veterans in FY 1981. It is particularly significant to note how this accomplishment relates to specific dollar amounts.



(Fig. 2)

These figures, then, demonstrate a $1.7 million increase in direct loans, and a $129.4 million increase in guaranty loans to veterans. A total of $131.1 million more than the FY 1980 totals was loaned to veterans in FY 1981.

During FY 1980, 1,933 Vietnam veterans and 2,123 other veterans received SBA busniess loan assistance, in FY 1981, 2,319 Vietnam veterans and 2,669 other veterans received SBA business loan assistance. Thus, there was a 23 percent increase of veterans benefitting from SBA's programs during the most recent fiscal year.

When one considers the cooperation of the regions in attaining the target, it becomes clear that some regions were more active than others. Based on percentage of regional allocations loaned to veterans that following is the regional ranking:

REGIONAL RANKING BASED ON TARGET ACCOMPLISHMENT

Region VII - 31%
Region VI - 22%
Region X - 22%
Region VIII - 19%
Region I - 18%
Region IV - 17%
Region III - 16%
Region IX - 14%
Region II - 13%
Region V - 11%

(FIG. 3)

When rated based on their contribution to the total SBA loans to veterans the regions are as follows:

(Fig. 4)

A composite of the Agency's loan statistics is attached as Exhibits 1 and 2. This emphasis has not required any additional allocation of funds and its future is not dependent on any increase in the Agency's appropriations.

EXHIBIT J

U.S. SMALL BUSINESS ADMINISTRATION
LOANS TO VETERANS

FY 1981 OCT 1980-SEPT 1981	DIRECT					GUARANTY				
	TOTAL DIRECT LOANS	VIETNAM - VETS $	%	OTHER VETS $	%	TOTAL GUARANTY LOANS	VIETNAM - VETS $	%	OTHER VETS $	%
REGION I	$ 17,816,065	$ 1,752,880	10	$ 1,005,600	06	$ 197,168,674	$ 19,117,594	10	$ 16,213,415	08
REGION II	48,171,199	1,974,300	04	4,205,500	09	245,500,107	9,144,178	04	22,395,623	09
REGION III	26,030,271	1,927,360	07	1,458,825	06	205,936,844	14,287,572	07	19,045,620	09
REGION IV	37,636,150	3,898,250	10	2,514,850	07	413,245,671	25,459,971	06	42,989,448	10
REGION V	40,724,536	2,578,597	06	1,748,630	04	549,597,925	20,549,902	04	37,958,065	07
REGION VI	34,638,800	4,612,900	13	3,265,500	09	380,521,426	28,776,387	08	55,356,002	15
REGION VII	9,338,500	1,160,650	12	1,176,250	13	253,849,375	24,271,422	10	54,432,551	21
REGION VIII	11,444,975	895,600	08	1,394,500	12	194,459,106	12,129,907	06	25,437,559	13
REGION IX	56,404,197	5,190,500	09	2,528,700	04	297,975,210	14,834,309	05	25,611,669	09
REGION X	7,157,150	779,150	11	473,400	07	148,946,315	16,660,022	11	17,202,344	12
ALL SBA	289,361,843	24,770,187	09	19,771,755	07	2,887,200,653	185,231,264	06	316,642,295	11
FY 1980	359,361,037	23,727,859	07	19,056,093	05	3,028,488,920	135,021,623	04	257,399,290	08
VARIATION + or (-)	(19%)	1,042,328	04	715,662	04	(05%)	50,209,641	37	79,243,006	33

	1981	1980
DIRECT	15%	12%
GUARANTY	17%	12%

PREPARED BY: OFFICE OF CHIEF COUNSEL FOR ADVOCACY
VETERANS AFFAIRS STAFF
OCTOBER 29, 1981

U.S. SMALL BUSINESS ADMINISTRATION
NUMBER OF LOANS TO VETERANS

	DIRECT LOANS					GUARANTY LOANS				
	ALL	Vietnam Vets	%	Other Vets	%	ALL	Vietnam Vets	%	Other Vets	%
Region I	422	36	(09)	23	(05)	1,928	196	(10)	159	(08)
Region II	1,031	44	(04)	80	(08)	2,135	112	(05)	180	(08)
Region III	451	36	(08)	21	(05)	1,658	125	(08)	152	(09)
Region IV	899	89	(10)	48	(05)	3,112	236	(08)	302	(10)
Region V	602	37	(06)	22	(04)	3,829	188	(05)	228	(06)
Region VI	585	70	(12)	44	(08)	3,102	281	(09)	387	(12)
Region VII	200	29	(15)	25	(13)	2,463	287	(12)	431	(17)
Region VIII	236	19	(08)	17	(07)	1,677	140	(08)	231	(13)
Region IX	854	84	(10)	38	(04)	2,110	145	(07)	159	(08)
Region X	157	18	(11)	8	(05)	1,201	147	(12)	132	(11)
All SBA	5,437	462	(08)	326	(06)	23,215	1,857	(08)	2,343	(10)
FY 1980	6,597	453	(07)	308	(05)	24,942	1,480	(06)	1,815	(07)
Variation + or (-)	(18%)	9	(02)	18	(06)	(07%)	377	(25)	528	(29)

PREPARED BY: Office of Chief Counsel for Advocacy
Veterans Affairs Staff
October 29, 1981

SOME IMPORTANT INVENTIVE CONTRIBUTIONS OF INDEPENDENT INVENTORS AND SMALL ORGANIZATIONS IN THE TWENTIETH CENTURY

Inventive Contribution	Invention Environment	Innovation Environment
Xerography	Small Firm	Small Firm
DDT	Small Firm?	
Insulin	University	Large Firm
Vacuum Tube	University	Small Firm
Rocket	University	Large Firm
Streptomycin	University?	
Penicillin	University	Small Firm?
Titanium Extraction		
Shell Molding		
Cyclotron	University	Large Firm
Cotton Picker	Small Firm	Small Firm
Shrink-Proof Knits		
Polyester Fiber	Small Firm	Large Firm
Catalytic Petroleum Cracking	Small Firm	Small Firm
Zipper	Small Firm	Small Firm
Automatic Transmission		
Gyrocompass	Small Firm	Small Firm
Jet Engine	Small Firm	Large Firm
FM Radio	Small Firm?	Small Firm?
Self-Winding Wristwatch		
Continuous Hot-Strip Steel Rolling		Large Firm?
Helicopter	Small Firm	Small Firm
Mercury Dry Cell		
Power Steering		
Kodachrome	Small Firm	Large Firm
Air Conditioning	Small Firm	Small Firm
Polaroid Camera	Small Firm	Small Firm
Heterodyne Radio		Small Firm
Ball-Point Pen		
Cellophane		Small Firm?
Tungsten Carbide		
Bakelite	Small Firm	Small Firm
Oxygen Steel Process		

Note: An innovation is the first sale using a discovery. A small firm is defined as having less than 500 employees.

Source: Title and list of inventive contributions from the Charpie Report (U.S. Department of Commerce, "Technological Innovation: Environment and Management," January 1967) pg. 18. Invention and innovation environments compiled by Office of Economic Research, Office of Advocacy, U.S. Small Business Administration, February 10, 1982.

SOME IMPORTANT INNOVATIONS BY U.S. SMALL FIRMS IN THE TWENTIETH CENTURY

Acoustic Suspension Speakers
Air Conditioning
Airplane
Assembly Line
Automatic Fabric Cutting
Automatic Transfer Equipment
Bakelite
Biosynthetic Insulin
CAT Scanner
Catalytic Petroleum Cracking
Continuous Casting
Cotton Picker
Double-Knit Fabric
Electrical Wire Nuts
Fiber Optic Examination Equipment
Geodesic Dome
Gyrocompass
Heart Valve
Heat Sensor
Helicopter
Heterodyne Radio
High Capacity Computer
Hydraulic Brake
Learning Machine
Link Trainer
Optical Scanner

Oral Contraceptives
Outboard Engine
Overnight National Delivery
Personal Computer
Photo Typesetting
Piezo Electrical Devices
Polaroid Camera
Precast Concrete
Prefabricated Housing
Pressure Sensitive Adhesive Tape
Safety Razor
Sonar Fish Monitoring
Strain Gauge
Strobe Lights
Vacuum Tube
Variable Output Transformer
Xerography
Zipper

Note: An innovation is the first sale using a discovery. A small firm is defined as having less than 500 employees.

Source: Compiled by the Office of Economic Research, Office of Advocacy, U.S. Small Business Administration, February 10, 1982.

STATEMENT OF

HOLLIS G. BOREN, M.D.

ASSISTANT CHIEF MEDICAL DIRECTOR

FOR RESEARCH AND DEVELOPMENT

DEPARTMENT OF MEDICINE AND SURGERY

VETERANS ADMINISTRATION

BEFORE THE

SUBCOMMITTEE ON HOSPITALS AND HEALTH CARE

HOUSE VETERANS' AFFAIRS COMMITTEE

JANUARY 27, 1982

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE:

I APPRECIATE THIS OPPORTUNITY TO TESTIFY BEFORE THE SUBCOMMITTEE REGARDING THE VETERANS ADMINISTRATION'S VIEWS ON H.R. 4326, THE "SMALL BUSINESS INNOVATION DEVELOPMENT ACT OF 1981".

MR. CHAIRMAN, THE SENATE HAS PASSED A BILL, S. 881, WHICH THE VA SUPPORTS WITH A SIMILAR PURPOSE TO HR 4326. SINCE MOST VA RESEARCH AND DEVELOPMENT PROJECTS ARE CONDUCTED IN-HOUSE, S. 881 WOULD NOT ADVERSELY AFFECT THE VA'S RESEARCH PROGRAM SINCE THE SENATE FORMULA EXEMPTS IN-HOUSE RESEARCH. FOR THIS AGENCY, THE SENATE BILL WOULD REQUIRE THE RESEARCH AND DEVELOPMENT PROGRAM TO ESTABLISH SET-ASIDE GOALS FOR SMALL BUSINESSES THAT WOULD CONTINUE EXISTING LEVELS OF CONTRACTING WITH SMALL BUSINESS CONCERNS. ADDITIONAL GOALS WOULD NOT BE REQUIRED UNTIL TOTAL RESEARCH AND DEVELOPMENT EXPENDITURES REACHED A TOTAL OF $300 MILLION IN A FISCAL YEAR.

WITHIN THE VETERANS ADMINISTRATION DEPARTMENT OF MEDICINE AND SURGERY, RESEARCH AND DEVELOPMENT IS CONDUCTED IN SUPPORT OF THE MISSION TO PROVIDE FOR THE HEALTH CARE NEEDS OF VETERANS. IN FISCAL YEAR 1982, APPROXIMATELY $128 MILLION WAS APPROPRIATED FOR THE CONDUCT OF RESEARCH AND DEVELOPMENT AT 129 VETERANS ADMINISTRATION HOSPITALS WHERE APPROXIMATELY 4,100 INVESTIGATORS ARE ENGAGED IN SOME 5,200 RESEARCH PROJECTS.

H.R. 4326 WOULD REQUIRE AGENCIES HAVING RESEARCH AND DEVELOPMENT BUDGETS, INCLUDING MONEY EXPENDED FOR INTRAMURAL RESEARCH, IN EXCESS OF $100 MILLION A YEAR TO ESTABLISH A SMALL BUSINESS SET-ASIDE RESEARCH PROGRAM. THIS SET-ASIDE WOULD BE FROM EXISTING APPROPRIATIONS AND FOR THE VA COULD AMOUNT TO AS MUCH AS $3.5 MILLION IN THE THIRD YEAR FOLLOWING ENACTMENT OF THIS BILL. MR. CHAIRMAN, THERE ARE SEVERAL REASONS WHY THIS LEGISLATION WOULD BE DETRIMENTAL TO THE VA'S RESEARCH AND DEVELOPMENT PROGRAM AND WHY THE VETERANS ADMINISTRATION STRONGLY OPPOSES ENACTMENT OF H.R. 4326.

THE VA CONDUCTS THE PREPONDERANCE OF ITS RESEARCH AND DEVELOPMENT PROJECTS AS AN INTRAMURAL EFFORT BY UTILIZING CLINICAL INVESTIGATORS EMPLOYED AT LEAST 5/8 OF THEIR TIME BY THE VA WITHIN ITS VA MEDICAL CENTERS. A UNIQUE ASPECT OF HIGH-QUALITY RESEARCH BY VA HEALTH CARE PROVIDERS, IN CONTRAST TO EXTRAMURAL INVESTIGATORS, IS THAT VA HEALTH CARE PROVIDERS ARE INTIMATELY INVOLVED IN VETERAN PATIENT CARE. AS SUCH, THEY HAVE DEMONSTRATED A VERY SPECIAL COMMITMENT TO QUALITY MEDICAL CARE FOR THE VETERAN PATIENT. THE NATURAL RESULT OF THIS COMMITMENT IS THE DESIRE TO IMPROVE VETERAN PATIENT CARE THROUGH AN ACTIVE INVOLVEMENT IN RESEARCH AND DEVELOPMENT.

THE ESTABLISHMENT OF A DOLLAR GOAL BASED ON TOTAL RESEARCH EXPENDITURES, INCLUDING INTRAMURAL RESEARCH, WOULD ARTIFICIALLY INFLATE THE AMOUNT TO BE SET-ASIDE FOR AN SBIR PROGRAM BY THE VA. THIS WOULD RESULT IN A GREATER PERCENTAGE OF THE VA'S ALREADY CONSTRAINED RESEARCH AND DEVELOPMENT BUDGET BEING SET-ASIDE THAN IS ACTUALLY AVAILABLE FOR CONTRACTING PURPOSES.

H. R. 4326 WOULD ALSO RESULT IN A REDUCTION OF AVAILABILITY OF FUNDING FOR CLINICIAN-RESEARCHERS IN VA MEDICAL CENTERS. AS A RESULT OF THE NEED TO REDUCE FEDERAL EXPENDITURES, THE FY 1982 LEVELS OF APPROPRIATIONS AND FTEE HAVE ALREADY BEEN REDUCED BELOW THE FY 1981 LEVELS. CONSEQUENTLY, ON THE BASIS OF AN ANALYSIS OF PRIORITIES, WE ARE CURRENTLY UNABLE TO FUND ALL SCIENTIFIC PROPOSALS BY VA HEALTH CARE PROVIDERS WHICH HAVE BEEN JUDGED SCIENTIFICALLY MERITORIOUS BY A NATIONAL PEER REVIEW PROCESS. A FURTHER REDUCTION IN AVAILABLE MONIES FOR INTRAMURAL RESEARCH WOULD MEAN THAT HIGH-QUALITY RESEARCH BY VA CLINICIAN-RESEARCHERS WOULD, OF NECESSITY, GO UNFUNDED.

IN ACCORDANCE WITH AGENCY PROCEDURES, A DECISION BY THE VA TO PURSUE A RESEARCH AND DEVELOPMENT PROJECT IS MADE ON THE BASIS OF A MERIT PROCESS WHICH EACH RESEARCH PROPOSAL MUST UNDERGO PRIOR TO APPROVAL. PROJECTS PROPOSED FOR FUNDING ARE REVIEWED BY NATIONAL VA MERIT REVIEW BOARDS. THE BOARDS REVIEW AND PRIORITIZE EACH PROPOSAL FOR SCIENTIFIC MERIT AND RELEVANCE TO THE HEALTH PROBLEMS OF VETERAN PATIENTS. PLACING ADDITIONAL REQUIREMENTS ON OUR PROGRAM WOULD PROBABLY HAVE THE EFFECT OF REMOVING A PERCENTAGE OF OUR RESEARCH EFFORT FROM THIS COMPETITIVE PROCESS. IN THE AREA OF MEDICAL

RESEARCH THAT IS DIRECTED AT SPECIFIC HEALTH PROBLEMS WE BELIEVE THAT SCIENTIFIC MERIT, RELEVANCE AND PRODUCTIVITY SHOULD BE THE ONLY FACTORS CONSIDERED IN COMPETING FOR SCARCE RESEARCH RESOURCES.

FOR THE REASONS WHICH HAVE BEEN ENUMERATED IN THIS PRESENTATION, THE VA FAVORS THE ENACTMENT OF THE SENATE VERSION OF THE BILL, S. 881, RATHER THAN THE ENACTMENT OF H.R. 4326.

MR. CHAIRMAN, WE WILL BE PLEASED TO ANSWER QUESTIONS FROM YOU OR OTHER COMMITTEE MEMBERS REGARDING OUR RESEARCH AND DEVELOPMENT PROGRAM AND THE SMALL BUSINESS INNOVATION DEVELOPMENT ACT OF 1981.

TESTIMONY PRESENTED TO U.S. HOUSE OF
REPRESENTATIVES COMMITTEE ON VETERANS
AFFAIRS BY DR. HOWARD H. GREEN CONCERNING
H.R. 4326, JANUARY 27, 1982

Mr. Chairman, I am Howard Green, Chief of Staff of the White River Junction VA Hospital, and the immediate Past President of the National Association of VA Chiefs of Staff. I've taken the liberty of contacting a representative sample of my colleagues to see if they concur in the opinions expressed in this testimony and they do. (Dr. Ralph Goldsmith - San Francisco, Dr. Earl Gordon - Wadsworth, Dr. Alfred Heilbrunn - Phoenix, Dr. Sam Threefoot - New Orleans, Dr. Jack Matoole - Omaha, Dr. Jerry Kowal - Cleveland, Dr. Richard Whittington - Gainesville.) I would like to thank you for your invitation to hear my views on H.R. 4326. I wish to make it clear at the outset that my critical comments on H.R. 4326 do not apply to S. 881, which because it exempts intramural research, would not have any negative effect on the VA. The VA evdorses S. 881.

I view H.R. 4326 with alarm for it attacks directly the philosophic base on which VA research funding was originally sanctioned and endorsed. Please bear with me by hearing the reasons why I and my colleagues believe as we do.

The original intent of setting aside money for the exclusive access of physicians was to offer an additional inducement for physicians to enter service in the Veterans Administration and to begin a research program which would be focused on the medical problems faced by veterans. If you will, in one aspect it was a sophisticated kind of bait used as a substitute for direct compensation. I must say the return on investment has

been remarkable. The opportunity to do research is a powerful inducement for the attraction of certain kinds of highly-motivated physicians of quality. The medical schools know this and research opportunity is one of the reasons why competition among physicians to have an association with a medical school is reasonably intense. If one considers that the medical school offers this opportunity in many cases only if the physician finds his/her own funding, it then becomes easy to understand the recruiting power of a research opportunity. The research appropriation was just part of the package put together to attract physicians to the Veterans Administration. The other key element was the affiliation with medical schools and the attendant development of teaching programs.

The size of the VA research appropriation is very small when matched against the total budget of DM&S ($128,000,000 vs. $7,000,000,000), approximately 1.8%; and it is getting smaller, a situation which is also of great concern. This appropriation is crucial because it serves two very important purposes. The first is that it permits us to compete for physicians of high caliber and, once recruited, to retain them. Secondly, it is one of the critical factors in the reason why medical schools are attracted to an association with the Veterans Administration.

There are several points about the nature of the VA research appropriation which merit iteration:

1. The nature of the system places it as almost unique because of central policy and operational coordination in its ability to contribute those clinical studies which define clearly the efficacy of certain therapeutic regimens and interventions. I

cite those studies on drugs for tuberculosis, hypertension, and treatment of cancer which have revolutionized the outcomes of these diseases.

2. Because of its career development ladder, it has contributed to the national medical and biological scientists of extraordinary caliber. I need only mention the Nobel Prizes of Drs. Yalow and Schally.

3. The system distributes funds to investigators based on a rigorous system of peer review for merit. It places a premium on investigator-initiated research. This form of research is the critical basic foundation on which the whole body of scientific knowledge rests.

It was not the original intent of Congress to allow the VA research program to become a pass-through to fund research extramual to the VA. To do this would be a repudiation of 36 years of successful policy. As an investment, the VA research appropriation has justified itself solely on the number and quality of health care profesionals it has brought to the system. The research itself has given to the world results of inestimable value.

I urge the committee to totally reject H.R. 4326 as presently drafted as an ill-advised assault on the philosophic base on which VA research stands.

I thank you personally and on behalf of my colleagues for this opportunity to express my views.

aamc association of american medical colleges

Statement of the

Association of the American Medical Colleges

on

"The Small Business Innovation and Development Act"

(H.R. 4326)

The Association of American Medical Colleges (AAMC) welcomes this opportunity to discuss with the Veterans Affairs Committee its views on H.R. 4326, "The Small Business Innovation Act of 1981", particularly since the Small Business Committee was unable to accommodate representation from the medical schools on its witness list when national hearings were held on this legislative proposal last September.

As you know, the AAMC serves as the national voice for all of the 126 operational U.S. medical schools, their students and faculties and over 70 academic and professional societies whose members are engaged in teaching, patient care, and research. The strong interest of our constituents in virtually all matters affecting the VA's Department of Medicine and Surgery stems from the highly productive relationships that have developed between the country's medical schools and the Veterans Administration hospitals since the end of World War II---interactions that have made the Association very sensitive to the problems of the VA medical care system. Affiliation

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Submitted to the House Veterans Affairs Committee Hospitals and Health Care Subcommittee for its hearing on H.R. 4326, "The Small Business Innovation and Development Act of 1981" on January 27, 1982.

Suite 200/One Dupont Circle, N.W./Washington, D.C. 20036/(202) 828-0400

agreements encompassing patient care, medical education and research are now in force between 102 medical schools and 182 of the existing 241 VA health care facilities. There is no question that this partnership has served the national interest. The academic atmosphere created in the VA hospitals by close affiliations with schools of medicine has enabled the VA to recruit and retain physicians of unusual talent and competence. The end result has been a substantial improvement in the quality of medical care provided to former servicemen and the emergence of vigorous and productive research programs that have contributed greatly to advancement in the health of both veterans and the general population.

First, the Association wishes to assure the Committee that fostering and exploiting the capability of small business to bring products based on the cutting edge of scientific research to the market is a laudable goal. However, the Association is profoundly convinced that the mechanism proposed to achieve it----set-asides derived from levies on the research and development budgets of the Federal science agencies---is bad for public policy, bad for scientific progress and, in this case, bad for the nation's veterans.

Effect of the Proposal

The essential effect of the legislation approved by the Small Business Committee of the House would be to sequester, from funds appropriated for the intramural medical and prosthetic research programs of the Veterans Administration, an amount of money that would be available for one and only one purpose: extramural awards to small business firms, either to conduct research, or to tool up for the production of new science and technology-based goods and services. Specifically, starting

in FY 1982, an increasing fraction of the research budget---reaching 3% or about $4 million in FY 1986---would be diverted to a small business innovation research (SBIR) program. Substantial additional funds would be drained from the research budget and significant numbers of additional personnel would be reassigned from already under-staffed functions in order to establish and operate the new extramural program mandated by this proposal.

A careful examination of H.R. 4326 has led the Association to the conclusion that the bill would have a very deleterious impact on the VA, by virtue of an annual diversion, from now hence forward, of badly needed support from research programs that are critically important for individual veterans as well as for the VA health care system. Moreover, the irrevocable loss of research productivity would have been for naught, since there is no convincing evidence that a SBIR program is needed nor that the best way to correct any "market imperfection", would be an outright subsidy to profit makers in the form of a set-aside.

Adverse Impact on the VA Programs

The Association and the members of this Committee are aware of the superb quality of the VA biomedical research program and of the stress imposed on it by several recent reductions in research appropriations.

The VA has established an enviable reputation throughout the entire world in many domains of biomedical research.

- Therapeutic trials related to the chemotherapy of tuberculosis and drug treatment of hypertension are examples

of work for which it has gained recognition as preeminent in experimental therapeutics.

- The discovery and development of the radioimune assay technique by Berson and Yalow---that earned the latter investigator a Nobel Prize---opened up vast new vistas of physiological research by making possible the measurement of extraordinarily minute amounts of biologically active chemical compounds.

- The isolation, identification and characterization of the first of a wholly new and vitally important family of releasing hormones from the hypothalamus by Andrew Shaffly and his group, another VA research breakthrough recognized by the Nobel Selection Committee, has enormously expanded our horizons in the fields both of normal endocrinology and metabolism and of endocrine and metabolic disease.

- Other spectacular successes, too numerous to cite, are what might be viewed as the icing on a very rich cake of steady, day-by-day research accomplishments that is surely but gradually pushing back the baleful assaults of disease and disability.

While plaudits for the VA programs have accumulated from all over the world, the Agency finds itself under severe financial pressures. The budget for medical and prosthetic research grew at an average annual rate of only 6.5% from FY 1977 to FY 1981, not keeping up with the erosion in purchasing power caused by inflation. Moreover, it dropped sharply from $141.1 million in FY 1981 to $128.0 million this year, a drop of 9.3% in current dollars on top of an additional 8.9% erosion

by inflation. The program will be further reduced by mandatory pay increases, unless additional funds can be secured through a supplemental appropriation. Now comes an additional 3% levy to help small businesses.

Necessity for a SBIR Program

The twin objectives of this bill that emerge from its legislative history warrant careful analysis.

Small Business Research

The Association argues that no special mechanism is necessary for any research carried on by small businesses, and that the creation of one subverts and corrupts the traditional policy of awarding Federal research and development funds on the basis of the technical merit of the work proposed and the competence of the performer. Let me amplify.

"For profits" are now eligible to submit unsolicited research proposals to virtually all of the Federal agencies with extramural R&D programs. The last significant barrier disappeared in January 1982, when the Public Health Services (PHS), including the Institutes of Health (NIH), opened its grant programs to "for profits." Patent disincentives ---in practical if not legal terms the real bar to small business participation---disappeared with the enactment of P.L. 96-517. This statute allows academic institutions and small businesses to retain title to inventions resulting from Federally-funded research and thereby it makes participation in Federal R&D programs far more attractive to small business.

With the new patent law and the change in PHS grant eligibility in effect, the Association sees no need for a special set-aside for small business research and development. These organizations, when they wish

to engage in bionedical or behavioral research, can seek support from the NIH, where they should compete for available funds on the same basis as all other applicants and be judged on the scientific and technical merits of their proposals by the peer review processes that have functioned so well as quality control devices for Federal research programs. This class of applicant should not, if unsuccessful in obtaining funds through the time honored competitive peer review process, be given a second chance at support by having access to a set-aside, dedicated solely to small business applicants. By the same token, why should funds be denied to more meritorious applicants from the non-profit sector in order to fund small business? The issue is not only one of fairness; it would be a public scandal to support lower quality research when higher quality applications are in hand and unfunded. A dual standard of quality, one for non-profits and a lower one for profit-making performers is indefensible public policy.

A set-aside for research by small business is thus both unnecessary and undesirable. The VA should certainly not be required to establish an extramural research program simply to accommodate the aspirations of the small business community.

Small Business Innovations

Proponents of this bill tend to minimize the significance of the line of argument just cited since, in their view, the forte of small business is not research but a unique capacity for achieving the second goal of the bill, developing new marketable products. The legislative history of H.R. 4326 indicates clearly an intent to assign a new function for Federal R&D agencies, or at least those that support R&D in biology and medicine: the continuation of the research and development process

to actual "tooling up" for the production of goods and services. In our free enterprise system, this latter function has traditionally been not only the responsibility, but the special and cherished opportunity, of the commercial entrepreneur, operating within the framework, methods, styles, and standards of the mercantile system. Why should this function suddenly become a public responsibility? What would be the consequences of such an expansion of Government's role?

One might ask why research should not also be a private sector responsibility. Research has been heavily subsidized from public funds as a social good, for the obvious reasons that new scientific knowledge is not only the fountainhead of technological progress, but also has no viable sources of support other than Government. It is essentially axiomatic in economic analysis that private sector companies underinvest in research, since the investors cannot capture exclusive rights to the wealth that might accure through exploitation of the results of research in which they funded.

Presumably the rationale for now turning to the Government for the support of "innovation" is that without it the nation's capacity for this vital activity will be seriously impaired. The Association is profoundly unpersuaded. In the field of medicine, there is no discernible lack of product development. Commercial organizations, large and small, have favored us with a cornucopia of new products and services. Look only at the mind-boggling instrumentation ensembles in coronary intensive care units, at the complex array of equipment in modern departments of diagnostic or therapeutic radiology, at the extensive portfolio of laboratory measurements available from clinical pathologists or at the vast catalogues of powerful drugs and effective devices from which physicians can prescribe.

Enterpreneurs seem to have had little difficulty with funding their activities from earnings, borrowings or equity capital for the simple reason that really good products and services for both health care delivery and biomedical research can be very profitably marketed. In the last 12-18 months, small business concerns proposing to exploit new discoveries on how DNA strands can be sliced and spliced, and on how clones of cells capable of producing single specific antibodies can be isolated and used to produce valuable biologicals, have been spectacularly successful in equity markets.

Even if "market imperfections" in meeting capital need could be convincingly demonstrated, it would be more appropriate for government subsidies to business to take the traditional forms: of tax incentives, perhaps beyond those enacted in the last session of this Congress; of loan guarantees; of interest subsidies for private sector loans; or even of direct loans, at whatever interest rates might be required to accomplish the objective. This well intentioned bill, ironically, could well have the effect of subsidizing "losers", since the "winners", i.e., companies with really good ideas for marketable products, would use traditional private sector resources rather than get involved with Government---with all that entails---while the Government would be left "holding the bag" of proposals that private financiers had found unattractive.

The Association concludes that a set-aside for small business "innovation" is not only unnecessary, but also an unwarranted subsidy to profit-making companies.

The Price Paid of Set-Asides

If the "set-asides," as proposed in H.R. 4326, should become law what harm, other than an unnecessary and less than otpimal use of "modest" amounts of public funds would result?

First of all, it is important to note that the amounts are not modest; the Congressional Budget Office (CBO) estimates that a 3% tax on the R&D budgets of the cognate Federal agencies would amount to about $1.665 billion dollars in FY 1986. Thus, the proposed set-aside represents, a large additional decrement to the severe progressive retrenchments in research funds seen in the last two sessions. These funds would be diverted from expenditures for the creation of new knowledge, the long-term well-spring of all subsequent product development, to the short-term exploitation of the existing, finite and exhaustible storehouse of current knowledge to produce practical goods and services. Thus, it stimulates consumption of the "seed corn" on which future harvests depend.

The substantial diversion of support from science and technology to practical art is costly not only in terms of the science not done, and the scientific manpower not utilized, but also in the expensive demands it places on the operations of Federal agencies. To establish small business "innovation" programs, they will have to create parallel peer review systems for this new genre of activity since the existing ones, for the most part, are not suited, especially tempermentally, to deal with a different class of projects. The costs include not only those of funding the organization and operation of an external advisory apparatus, but also those incurred when Federal personnel, already in short supply, are transferred from understaffed programs and committed to the support of new ones.

Conclusion

The Association hopes that this summary of its position persuades you that its deep misgivings about H.R. 4326 are well founded and not frivolous or self-serving. As stated earlier, it perceives that the effects of the bill would be bad for public policy, bad for science, and totally unnecessary. The AAMC does not begrudge small business firms as much of the Federal research budget as they can win in open competition, be it one percent, three percent, twenty percent. But they must win it, fair and square. The AAMC could support subsidy of small business firms for product development: provided it were demonstrated to be necessary; provided appropriate mechanisms--further tax incentives, loan guarantees, interest subsidies, direct loans--were adopted; and provided a dedicated new appropriation was made available, preferably for the Small Business Administration (SBA) that has experience with this segment of the business community. The canard so frequently heard, that it is pusillanimous of the academic community to object to this so-called trivial one or three percent tax on the Federal R&D budget cuts both ways; if the amount is that small, a separate new appropriation would not create any substantial additional strain on the Federal budget.

Research in the VA is at the crossroads. The painful accommodations to the recent cutbacks have been felt throughout the system. No new research career appointments are being made. Wholesale disapprovals of meritorious research applications have been necessary. Currently supported investigators have had to absorb reductions in their budgets. Cooperative studies and alcoholism research have been severely curtailed. With little hope for surcease, morale is at the lowest ebb

in memory. I assure you, I am not a "chicken-little" when I assert that the sky could come down, the VA medical research program could collapse. Virtually all of the physician investigators could substantially increase their incomes instantly by entering the private practice of medicine; the top notch Ph.D.'s--and there are many of them in the VA system--could improve their economic status significantly in industry. But contemplate, if you would, the loss that the nation and especially the veteran would sustain.

The VA research program desperately needs assistance. The latest blow--an additional 3% cut--could well do it in, and to no good result at that!

Recommendations

What course of action should be taken? The Association recognizes the jurisdictional problems created by the bill. The Small Business Committee has proposed statutory earmarks on programs in the arena of responsiblity of a number of other Committees--Veterans' Affairs, Agriculture, Armed Services, Energy and Commerce, Science and Technology. The options available to this Committee are better understood by you than by the AAMC but they at least include radically modifying the bill or recommending its outright disapproval--the outcome preferred by this Association. Our major fallback recommendation, were our preferred outcome impossible, would, at the very least, be exemption from the requirements of the bill of agencies supporting biomedical and behavioral research--the Veterans' Administration, the National Institutes of Health and the Alcohol, Drug Abuse, and Mental Health Administration. The amendment to the Senate counterpart of H.R. 4326, introduced by Senator Schmitt, to protect national investments in basic research, would not be helpful in the biomedical and behavioral areas. The appropriations and the budget request of these agencies do not differentiate between amounts for basic research, for applied research and for development. Such determinations require difficult to impossible distinctions, except at the extremes. Further, a number of propsals that, in essence, tinker with legislative language in the hope of taking some of the sting out of the bill as written would not in the Association's view significantly improve a greviously flawed concept.

aamc association of american medical colleges

JOHN A. D. COOPER, M.D., PH.D
PRESIDENT

202: 828-0400

February 10, 1982

The Honorable Ronald M. Mottl
Chairman, Subcommittee on
Hospitals and Health Care
Committee on Veterans Affairs
U. S. House of Representatives
Washington, D. C. 20515

Dear Chairman Mottl:

At the January 27 hearings held by the Subcommittee on Hospitals and Health Care on H.R. 4326, Representative Margaret Heckler asked me to submit for the hearing record lists of the medical schools offering courses in geriatrics and nutrition. The connection between this request and the subject of the hearing, legislation to set aside three percent of the research and development funds of the major federal science agencies to support small business innovation research programs is unclear. Nevertheless, attached are lists of those schools, among the 126 accredited U. S. medical schools, that are offering elective courses in these subjects during this academic year. Eighty-four schools offer an elective in geriatrics and 101 schools in nutrition.

Commonly, the Association is importuned to urge schools to require courses in these areas. As mentioned during direct questioning, our position has been that elements relating to both should be a part of the overall educational program for both medical students and residents. For example, in the preclinical phase of their education, medical students learn the structure and metabolism of proteins, carbohydrates, and fats. The role of vitamins and trace elements in metabolism are also taught. During the clinical phase, every student encounters patients who have nutritional problems, and the clinical manifestations of nutritional disease are observed. However, a nutrition course of the kind taught by nutritionists that focuses on dietary intake and the relative nutritional value of foods is not generally taught to medical students as a required subject and they are apt to have no significant experience with dietary planning. However, during graduate education, education about the nutritional needs of patients can be tailored

to the specialties for which residents are training. To illustrate, the knowledge of nutrition that internists and family physicians need to care for adult patients with obesity, diabetes, or anorexia differs in scope from the knowledge required by pediatricians subspecializing in neonatology. For this reason, specific education in nutrition is better concentrated in the specialized, graduate years.

A required course in geriatrics would tend to set the problems of aging apart from the rest of medicine. Knowledge about the changes in body structure and function with aging should be incorporated into medical school coursework and not taught as an independent subject. The social and economic constraints that may impair the medical care of the elderly and require alternatives not usually considered necessary for children or mature adults should be taught by all clinical disciplines to both medical students and residents. The regional conferences on geriatric education that the Association will hold this year with support from a grant from the Pew Memorial Trust, will bring faculties of many disciplines together to discuss how this approach can be welded into students' and residents' educational programs.

The teaching hospitals owned, operated, or affiliated with the nation's medical schools are a major resource for the provision of high quality medical care to the elderly. Many elderly patients have multiple disease problems. Their diagnostic and therapeutic requirements are often complex and costly. Further, academic medical centers are also primary loci for the advances in biomedical research that will improve the medical treatment and consequently the health of older populations. To ensure that academic medical centers can continue to provide: education commensurate with the challenges the physicians of the future will face; high quality care; and a locus for advances in biomedical research, it is essential that the special role of these centers, as unique institutions comprised of schools, hospitals, and research facilities, be both recognized and facilitated.

The Association is pleased to have the opportunity to respond to your request for this information.

Sincerely,

FOR John A. D. Cooper, M.D.

cc: The Honorable Margaret M. Heckler

MEDICAL SCHOOLS OFFERING NUTRITION AS AN ELECTIVE

N = 101

Alabama
Alabama, South
Albany
Albert Einstein
Arizona
Arkansas
Baylor
Boston University
California, University of
  Davis
  Los Angeles (UCLA)
  San Diego
  San Francisco
California, Southern
Caribe - Cayey
Case Western Reserve
Chicago Medical
Chicago - Pritzker
Cincinnati
Colorado
Columbia
Connecticut
Cornell
Dartmouth
Duke
East Carolina
Florida State
Florida, University of
Georgetown
George Washington
Georgia
Hahnemann
Harvard
Hawaii
Howard
Illinois, Southern
Illinois, University of
  Abraham Lincoln
  Rockford
Iowa
Jefferson
Johns Hopkins
Kansas
Kentucky
Loma Linda
Louisiana - New Orleans
Louisiana - Shreveport
Loyola - Stritch
Maryland
Massachusetts
Mayo
Meharry
Michigan State
Michigan, University of
Minnesota - Duluth
Missouri - Columbia
Missouri - Kansas City
Mount Sinai
New Jersey: UMDNJ
  New Jersey Medical
  Rutgers
New Mexico
New York Medical
New York University
New York: SUNY
  Buffalo
  Stony Brook
  Upstate
North Carolina
North Dakota
Northwestern
Ohio, Medical College of
Ohio, Northeastern
Ohio State
Oklahoma
Oral Roberts
Oregon
Pennsylvania, Medical College of
Pennsylvania State
Pennsylvania, University of
Puerto Rico, University of
Rush
Saint Louis
South Carolina, Medical University of
South Carolina, University of
Stanford
Temple
Tennessee, University of
Texas A & M
Texas, University of
  Houston
  San Antonio
Texas Tech
Tufts
Tulane
Uniformed Services University
Utah
Vanderbilt
Virginia, Eastern
Virginia, University of
Washington University (St. Louis)
Washington, University of
Wayne State
Wisconsin, University of
Wright State
Yale

Source: 1981-82 AAMC Curriculum Directory

MEDICAL SCHOOLS OFFERING GERIATRICS AS AN ELECTIVE

N = 84

Albany
Albert Einstein
Arizona
Arkansas
Baylor
Boston University
California, University of
  Davis
  Los Angeles (UCLA)
  San Francisco
California, Southern
Caribe - Cayey
Case Western Reserve
Chicago Medical
Cincinnati
Connecticut
Cornell
Dartmouth
Duke
East Carolina
Florida, South
Florida State
Florida, University of
Georgetown
George Washington
Georgia
Hahnemann
Harvard
Illinois, Southern
Illinois, University of
  Abraham Lincoln
  Rockford
Indiana
Iowa
Jefferson
Johns Hopkins
Kansas
Kentucky
Loma Linda
Louisiana - New Orleans
Louisville
Loyola - Stritch
Maryland
Meharry
Miami
Michigan State
Michigan, University of
Minnesota - Duluth
Minnesota - Minneapolis
Missouri - Columbia
Missouri - Kansas City
Mount Sinai
Nebraska
Nevada - Reno
New Jersey: UMDNJ
  New Jersey Medical
  Rutgers
New Mexico
New York Medical
New York University
New York: SUNY
  Buffalo
North Dakota
Northwestern
Ohio, Northeastern
Ohio State
Pennsylvania, Medical College of
Pennsylvania State
Pennsylvania, University of
Puerto Rico, University of
Rochester
Saint Louis
South Carolina, University of
South Dakota
Temple
Tennessee State, East
Texas A & M
Texas, University of
  Galveston
Texas Tech
Tufts
Utah
Vanderbilt
Virginia, Eastern
Virginia, Medical College of
Virginia, University of
Washington, University of
Wisconsin, University of
Wright State

Source: 1981-82 AAMC Curriculum Directory

V F W VETERANS OF FOREIGN WARS OF THE UNITED STATES

NATIONAL LEGISLATIVE SERVICE

Office of Director

STATEMENT OF

JAMES N. MAGILL, SPECIAL ASSISTANT
NATIONAL LEGISLATIVE SERVICE
VETERANS OF FOREIGN WARS OF THE UNITED STATES

BEFORE THE

SUBCOMMITTEE ON HOSPITALS AND HEALTH CARE
COMMITTEE ON VETERANS' AFFAIRS
UNITED STATES HOUSE OF REPRESENTATIVES

WITH RESPECT TO
THE SMALL BUSINESS INNOVATION DEVELOPMENT ACT
OF 1982

WASHINGTON, DC JANUARY 27, 1982

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

Thank you for the privilege of appearing before this distinguished Subcommittee to present the views of the Veterans of Foreign Wars of the United States with respect to HR 4326, the "Small Business Innovation Development Act of 1982," supported by a large bipartisan co-sponsorship, including the Chairman and many members of the House Veterans' Affairs Committee.

As you know, Mr. Chairman, HR 4326 would require agencies having annual research and development budgets exceeding $100 million to establish Small Business Innovation Research (SBIR) Programs. The intent of these programs is to strengthen the role of small business in federal government research and development activities by facilitating the ability of science or technology-based business concerns to obtain a larger share of federal research and development expenditures. This would be accomplished by requiring any qualifying agency to reallocate a portion of its research and development budget to fund the SBIR program: 0.5 percent the first fiscal year, 1 percent in

the second fiscal year, 2 percent in the third fiscal year, and 3 percent in all subsequent fiscal years. In addition HR 4326 provides that federal agencies simplify the small business' task of locating projects that match its capabilities.

Mr. Chairman, the VFW has recognized the many achievements small businesses have contributed to science and industry, and have expressed these acknowledgements in testimony before appropriate committees of the U.S. Congress. We support the concept of HR 4326 and believe the basic objectives of th bill should be advanced in a timely manner.

Naturally, our major concern is concentrated on what impact this measure will have on the Veterans Administration's research and development program. This concern is greatly accentuated by the fact that the VA's medical and prosthetic research program suffered a cut of approximately 14.9 percent in the fiscal year 1982 budget and is now being operated on a funding level below that of fiscal year 1980.

The nature of the VA research and development program is essentially intramural, in which clinical investigators conduct studies at VA medical centers. Comprising nearly 80 percent of all VA medical research, this intramural program was specifically designed to promote the recruitment and retention of physicians and enhance patient care. Most of the clincial investigators are VA staff directly involved in patient care. In many cases, the VA physician in treating veteran patients encounters problems that cannot be immediately rectified and thus the physician must initiate research. The research resulting from this direct patient care is spontaneously generated; the need not being predetermined.

Mr. Chairman, as stated previously we support the concept of HR 4326, however, we question the advisability of advancing legislation that would allow intramural and/or human research to be conducted by small business. The VA is currently awarding contracts to business concerns for extramural research and development projects and any increase in this funding level would result in a reduction in other research programs. Because of this, we believe, these programs may be seriously compromised if this bill in its present form were to become public law. We respectfully request that this Subcommittee amend HR 4326 to specifically exclude the VA's intramural medical and prosthetic research program. We recognize the fact that research conducted by small business has a role in the public sector but should be confined, in this case, to extramural research and development activities.

Mr. Chairman, we appreciate the opportunity to express our views on this matter. This concludes my testimony, and I will be happy to respond to any questions you may have.

BERKLEY BEDELL, IOWA
CHAIRMAN

NICHOLAS MAVROULES, MASS.
CHARLES HATCHER, GA.
DENNIS E. ECKART, OHIO

SILVIO O. CONTE, MASS.
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United States House of Representatives
Committee on Small Business
Subcommittee on Energy, Environment, and
Safety Issues Affecting Small Business
B-363 Rayburn House Office Building
Washington, D.C. 20515

STATEMENT OF

HON. BERKLEY BEDELL

Before the

House Veterans' Affairs Committee

January 27, 1982

Dear Mr. Chairman:

I commend you and your committee for your timely action on the Small Business Innovation Research Act. As you know, this legislation is anxiously awaited by the small business community.

I welcome this opportunity to comment on the pending legislation and ask that this statement be made a part of your hearing record.

Various witnesses who will appear before your Committee will discuss in some detail the mechanics of this legislation. Rather than repeating that same information, I would like to point out what I feel is the need for this legislation and just how I expect the legislation will work to stimulate and benefit our national economy.

First, let me refer to the material attached to this statement. These include a press release announcing the National Science Foundation's Small Business Innovation Research Awards for 1977-81, a background paper describing the NSF Small Business Innovation Research Program, and a list of the small businesses receiving NSF SBIR funding.

I strongly urge you to review the list and note the tremendous diversity of award categories. The 85 awards in 1981 were made for advanced research in the following areas of potential application: materials; bio-sources of materials; advanced manufacturing processes; advanced chemical processes; industrial biological processes; microelectronics; communications and systems; computer science and engineering; robotics and controls; scientific and industrial measurements; radiation processing and control; light machinery and components; advanced automotive research; food process engineering; marine resources; mineral resources; environmental technology; tunneling; earthquake engineering; and science and technology to aid the handicapped.

The NSF program is a highly competitive one. Of the more than 2000 proposals NSF has received since 1977, only 284 were selected for Phase I awards. Furthermore, of the funded Phase I proposals, 25% have historically received Phase II funding. Thus, only about 3.5% of all proposals will be funded through the NSF SBIR program.

I raise this point because I am dismayed by insinuations I have heard that SBIR programs would in some way diminish the quality of research and development in the United States. There can be no doubt that there is a large and diverse enough body of small, high-technology firms in America to provide the vigorous competition that will insure nothing but the highest quality research and development from agency SBIR programs.

To be blunt about it, Mr. Chairman, I am somewhat concerned about the quality of competition in the present system of R&D contract awards. It sometimes seems that in certain agencies, research proposals are weighed as much for the influence of the applicants as they are for the quality of the ideas.

The unanimous vote in support of the legislation by the Small Business Committee is a reflection of our observation that small firms are suffering because they have the least political clout and have the meekest voice in this town. They cannot afford to spend their resources on Washington lawyers and expensive lobbyists, and thus they are being pushed to the end of the line, despite the merits of their work.

Lacking any other explanation as to why small business' share of federal research and development procurement is languishing at 3 1/2% of our national effort, I am forced to consider the anti-risk and anti-small business attitudes that pervade much of the beauracracy. Trying to minimize the risks that are inherent in research and development activity, federal agencies have shown an amazing bias toward giving contracts to our largest institutions as opposed to relatively unfamiliar small firms.

I am concerned about the anti-small business attitudes of academically oriented agencies. A 1980 study done for the SBA by the Research and Planning Institute, Inc. of Cambridge, Mass. states:

> One problem that came up several times was the inability of small business to receive basic research support from certain agencies, especially NSF and NIH which primarily fund research at university and non-profit institutions. In fact, their ideas are not even given a fair hearing. One company, that wished to gain support for basic research to better understand the scientific underpinnings of its technology, created a non-profit laboratory facility. The non-profit institution was able to obtain basic research funds to pursue to originally proposed research. While most people were in favor of government support of basic research, there was resentment that in those cases where a profit making business could do the work better than another institution at no additional cost it still was denied the opportunity to do so.

I think it is ironic that in one of these agencies, NSF, small business has had a very difficult time breaking into their regular R&D procurement process. Yet NSF, at the same time, is operating a highly productive and effective SBIR program. This clearly illustrates the institutional problem small businesses face when attempting to gain access to federal R&D contracts.

Opponents of this legislation have claimed that small business research proposals do not fit established molds, i.e., basic research, applied research, etc. On this point, the legislation's opponents are correct. Perhaps this is exactly why they have such trouble understanding what the legislation is designed to do. It is intended to break the established molds. It is designed to get new people involved in federally-funded research and it is intended to help us get more bang for the federal R&D dollar.

The government's willingness to fund unsolicited innovation proposals is of paramount importance to the health of our economy. Just as basic research is vitally important for increasing our awareness of our changing world, innovative research is important to the development of new products and processes to meet national problems and improve the quality of life for everyone. This legislation in no way attempts to favor one "type" of spending over another, it is merely a method of assuring that the small business sector will get some small share of federal research and development dollars to demonstrate its proven ability to produce innovative technological developments.

Of course, we are aware of the significant cutbacks in federal research and development spending that have been proposed and implemented recently. Universities and small businesses alike will be directly affected. Small businesses with innovative ideas have been helped a great deal by government support of their unsolicited proposals. Unfortunately, the current changes in federal R&D policy have affected the government's level of support for unsolicited proposals, in fact it has almost disappeared.

As the report by the Research and Planning Institute says:

> If proposed research does not fit into a well defined segment of the current research strategy of a government agency, no mechanism exists to permit its funding, regardless of its merit. Companies can survive by providing incremental information and developing the appropriate instrumentation to move along an existing, government supported technology. But the radically new ways of solving problems are not given a reasonable chance to prove their validity. The current climate, with its tight R&D budgets that must be defended as mission related and the propensity, when in doubt, to give money out in large segments to well known companies, all work against the development of new, exciting technical advances.

The intent of the SBIR legislation is to provide a place in each federal agency for innovative small firms to submit research proposals. The legislation, as reported by the Small Business Committee, gives each federal agency the flexibility to set up its SBIR program in any manner it feels best serves areas of national need as designated by the agency. I would hope that proposals and ideas will flow into SBIR programs from within an agency as well as from the outside. I expect that there will be a great deal of coordination between agency program directors and SBIR officials and that vigorous technical monitoring of SBIR contracts will come from appropriate agency program offices.

Past and present experience clearly shows that the small business and university communities are intertwined in the performance of research and development activities. For example, of the 21 small business award winners in NSF's 1977 Phase II SBIR solicitations, 19 of the small businesses were coupled with a total of 36 university research programs.

In another example, a new research facility being opened at a leading West Coast university is receiving major funding assistance from several Fortune 500 high technology corporations. These companies once were small, high technology firms themselves with roots in the university community.

Small businesses often assist universities in taking research out of the laboratory and into the marketplace. On the other hand, universities offer small businesses a resource pool for many research functions. Clearly, agency SBIR programs will entail a high degree of university participation, tapping the best skills of both institutions in a highly productive fashion.

Stimulating innovative activity among small firms offers us a way to help improve our rapidly eroding position of technological superiority in the world. It will afford us the chance to build a strong economic base that will help us to achieve energy independence, to increase productivity, to solve biological, genetic and medical questions and to maintain our national security.

Small, innovative firms exhibit remarkable job creation rates. The benefits they provide both locally and nationally should be of great interest to everyone in a time when our economy is feeling the effects of the decline in the rates of growth and productivity in our mature industries.

If the United States desires to control inflation, stimulate economic growth, provide jobs, nurture new industry and improve the quality of life for its people, then individual entrepreneurs and small firms must be encouraged to engage in innovation. Unfortunately, however, the most innovative sector of the American economy, small science and technology based enterprises, have been virtually excluded from federally-funded research activity.

These are the reasons this very modest piece of legislation is needed. I urge you to protect the integrity of the concepts and funding mechanisms contained in the Small Business Innovative Research Act.

STATEMENT OF
REP. JOHN J. LaFALCE OF NEW YORK
CHAIRMAN OF THE HOUSE SMALL BUSINESS GENERAL OVERSIGHT SUBCOMMITTEE
BEFORE THE HOUSE VETERANS' AFFAIRS COMMITTEE
JANUARY 27, 1982

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE, I APPRECIATE THE OPPORTUNITY TO PRESENT TESTIMONY TO THE VETERANS' AFFAIRS COMMITTEE ON BEHALF OF H.R. 4326, THE SMALL BUSINESS INNOVATION DEVELOPMENT ACT. I AM GLAD TO SEE THIS COMMITTEE GIVING THIS IMPORTANT BILL SUCH THOROUGH CONSIDERATION.

AS YOU MAY RECALL, THE WHITE HOUSE CONFERENCE ON SMALL BUSINESS STRONGLY ENDORSED THIS LEGISLATION IN JANUARY 1980, AND THE HOUSE SMALL BUSINESS COMMITTEE HAS BEEN WORKING OVER THE PAST TWO CONGRESSES TO ACHIEVE ITS ENACTMENT. OUR COMMITTEE SET THE STAGE FOR HOUSE CONSIDERATION OF THE INNOVATION BILL LAST OCTOBER BY UNANIMOUSLY REPORTING H.R. 4326. THE SENATE HAS ALREADY PASSED ITS VERSION OF THE INNOVATION BILL BY A 90 TO 0 VOTE.

THE SMALL BUSINESS INNOVATION DEVELOPMENT ACT IS LONG OVERDUE. WE HAVE ONLY TO LOOK AT THE SCIENTIFIC, TECHNOLOGICAL, AND ECONOMIC CHALLENGES OUR NATION FACES TODAY TO REALIZE WHY THIS LEGISLATION IS IMPERATIVE. THE WARNING SIGNS ARE CLEAR. WE SEE:

--A SHARP DROP IN U.S. PRODUCTIVITY. THE RATE OF PRODUCTIVITY FOR THE U.S. HAS DECLINED TEN-FOLD OVER THE PAST DECADE AND NOW LAGS FAR BEHIND THAT OF THE REST OF THE WORLD'S MAJOR INDUSTRIAL NATIONS.

--A SERIOUS DECLINE IN THE ABILITY OF THE U.S. TO INNOVATE AND TO APPLY INNOVATIONS FOR COMMERCIAL AND INDUSTRIAL PURPOSES. PATENT AWARDS TO U.S. NATIONALS HAVE BEEN DROPPING OVER THE PAST

DECADE, WHILE THE NUMBER OF INNOVATIVE TECHNOLOGY-BASED COMPANIES STARTING UP IS MUCH LESS THAN A FEW YEARS AGO, ACCORDING TO A U.S. COMMERCE DEPARTMENT STUDY. MOREOVER, IT IS JAPANESE COMPANIES, NOT U.S. COMPANIES, THAT HAVE BEEN APPLYING MANY AMERICAN TECHNOLOGICAL BREAKTHROUGHS, LIKE THE TRANSISTOR AND THE SEMI-CONDUCTOR. THE WALL STREET JOURNAL REPORTS THAT THE JAPANESE ARE GOING A STEP FURTHER AND ARE LAYING THE GROUNDWORK TO GENERATE THE TECHNOLOGICAL INNOVATION THAT THEY REALIZE IS ESSENTIAL FOR ECONOMIC GROWTH. WE IGNORE THE JAPANESE AT OUR OWN PERIL. AS WILLIAM AGEE, CHAIRMAN OF THE BENDIX CORPORATION, HAS WARNED, "...80 PERCENT OF THE ELECTRONICS PATENTS IN THE LAST FIVE YEARS HAVE BEEN ISSUED TO JAPANESE COMPANIES, SO THEY'RE GETTING READY (TO COMPETE) WITH PRODUCTS AS WELL AS PROCESSES. WE SHOULD BE VERY WORRIED."

--INADEQUATE RESEARCH INVESTMENT. AMERICAN INDUSTRY IS MORE INTERESTED IN SHORT-TERM PROFITS THAN IN LONG-TERM INVESTMENTS IN R&D. AS ROBERT H. HAYES AND WILLIAM J. ABERNATHY OF THE HARVARD BUSINESS SCHOOL HAVE POINTED OUT IN THEIR SEMINAL ARTICLE, "MANAGING OUR WAY TO ECONOMIC DECLINE," "...INVESTMENT IN BOTH NEW EQUIPMENT AND R&D, AS A PERCENTAGE OF GNP, WAS SIGNIFICANTLY HIGHER TWENTY YEARS AGO THAN TODAY...BY THEIR PREFERENCE FOR SERVICING EXISTING MARKETS RATHER THAN CREATING NEW ONES AND BY THEIR DEVOTION TO SHORT-TERM RETURNS AND MARKETING BY NUMBERS, MANY...(CORPORATE MANAGERS) HAVE EFFECTIVELY FORESWORN LONG-TERM TECHNOLOGICAL SUPERIORITY AS A COMPETITIVE WEAPON."

--STATEMENTS BY EXPERTS, INCLUDING A RECENT ARTICLE IN THE NEW YORK TIMES MAGAZINE SAYING, "THERE ARE MANY SCIENTIFIC, TECHNOLOGICAL, AND ECONOMICS EXPERTS WHO FEAR THAT THE U.S. STANDS ON THE BRINK OF ...A (TECHNOLOGICAL) DECLINE BECAUSE THE NATION'S

INGENUITY, ITS ABILITY TO CAPITALIZE UPON SCIENTIFIC FINDINGS AND CREATE A NEW TECHNOLOGY THAT LEADS TO NEW PRODUCTS IS FALTERING." BURTON MALKIEL, CHAIRMAN OF PRINCETON UNIVERSITY'S ECONOMICS DEPARTMENT, AGREES. "THERE CAN BE LITTLE DOUBT THAT THE CREATIVE PULSE OF THE COUNTRY IS SLOWING DOWN," HE SAYS.

AN ALL-OUT EFFORT THAT UTILIZES ALL COMPONENTS OF OUR NATIONAL SCIENCE SYSTEM IS REQUIRED IF WE ARE TO KEEP THE U.S. INNOVATIVE AND OUR ECONOMY COMPETITIVE AND PRODUCTIVE. WE MUST DRAW ON NOT ONLY THE UNIVERSITIES, LARGE CORPORATIONS AND RESEARCH INSTITUTIONS, BUT ON THE SMALL SCIENCE AND HIGH-TECHNOLOGY FIRMS IN THIS EFFORT.

INDEED, THE SMALL SCIENCE AND HIGH-TECHNOLOGY FIRMS ARE THE KEY TO KEEPING THE U.S. THE PREEMINENT GENERATOR OF INNOVATION. A RECENT NATIONAL SCIENCE FOUNDATION STUDY REPORTED THAT ON THE BASIS OF A SAMPLE OF MAJOR INNOVATIONS INTRODUCED TO THE MARKET BETWEEN 1953 AND 1973, SMALL FIRMS WERE FOUND TO PRODUCE ABOUT 24 TIMES AS MANY MAJOR INNOVATIONS PER R&D DOLLAR AS LARGE FIRMS AND FOUR TIMES AS MANY AS MEDIUM-SIZED FIRMS.

MOREOVER, SMALL SCIENCE AND HIGH-TECHNOLOGY COMPANIES ARE ESSENTIAL TO REBUILDING THE U.S. ECONOMY. THESE FIRMS HAVE ONE OF THE FASTEST RATES OF GROWTH IN NET EMPLOYMENT, SALES, EXPORTS, PRODUCTIVITY, NET REVENUES AND TAX DOLLARS IN THE U.S. WE HAVE ALREADY SEEN THE TREMENDOUS BOOST THEY HAVE PROVIDED TO THE ECONOMIES OF SUCH STATES AS MASSACHUSETTS, NEW HAMPSHIRE, NORTH CAROLINA, AND CALIFORNIA.

SMALL BUSINESSES ARE THE PRIMARY CREATORS OF THE NEW JOBS THAT OUR ECONOMY AND OUR POPULATION SO DESPERATELY NEED. ACCORDING TO PROFESSOR DAVID L. BIRCH OF THE MASSACHUSETTS INSTITUTE OF

TECHNOLOGY, TWO-THIRDS OF THE NEW JOBS CREATED BETWEEN 1969 AND 1976 WERE CREATED BY FIRMS WITH 20 OR FEWER EMPLOYEES, AND ABOUT 80 PERCENT WERE CREATED BY FIRMS WITH 100 OR FEWER EMPLOYEES. FURTHERMORE, MANY OF THE SMALL BUSINESS JOBS ARE IN THE HIGH-TECHNOLOGY, HIGH "THOUGHT CONTENT" AREA. DRAWING FROM HISTORICAL EXPERIENCE, PROFESSOR BIRCH NOTES:

> JUST AS WE MOVED IN THE 1820'S AND THE 1830'S FROM BEING A BASICALLY AGRICULTURAL SOCIETY TO BEING AN INDUSTRIAL ONE, SO NOW ARE WE RAPIDLY ABANDONING OUR HEAVY INDUSTRIAL BASE IN FAVOR OF JOBS THAT DEMAND GREATER USE OF OUR MINDS AND LESS OF OUR MUSCLE AND DEXTERITY.
>
> THE TRANSFORMATION IS THUS A FUNDAMENTAL AND FAR-REACHING ONE. WE ARE MOVING FROM MANUFACTURING TO SERVICES, FROM HARDWARE TO "THOUGHTWARE," FROM LARGE-SCALE CAPITAL INTENSIVE COMPANIES TO SMALL-SCALE LABOR INTENSIVE COMPANIES, AND FROM DEPENDENCE ON PHYSICAL CAPITAL TO DEPENDENCE ON HUMAN CAPITAL.

THE SMALL BUSINESS INNOVATION DEVELOPMENT ACT IS A CRUCIAL PART OF THE EFFORT TO STIMULATE INNOVATION AND THE FIRMS THAT ARE THE GENERATORS OF INNOVATION. THE SMALL SCIENCE AND HIGH-TECHNOLOGY FIRMS PLAY A UNIQUE ROLE IN OUR SCIENTIFIC AND ECONOMIC SYSTEM BY SERVING AS A MEANS OF TRANSFERRING THE RESULTS OF RESEARCH OCCURRING AT THE FRONTIERS OF KNOWLEDGE TO THE MARKETPLACE. THIS IS VERY IMPORTANT TO THE UNIVERSITY SCIENTISTS AND ENGINEERS WHO DEVELOP THE INNOVATIVE IDEAS. MANY OF THE INDIVIDUALS WHO ESTABLISH THESE FIRMS ARE FORMER ACADEMICS OR UNIVERSITY RESEARCHERS WHO HAVE AN IDEA THAT THEY FEEL CAN BE COMMERICALLY MARKETED.

AS WE KNOW, SMALL BUSINESS AND UNIVERSITIES HISTORICALLY HAVE WORKED TOGETHER. ONE HAS ONLY TO LOOK AT THE CLOSE RELATIONSHIP BETWEEN THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY AND THE ROUTE 128 HIGH-TECHNOLOGY COMPLEX AROUND BOSTON. CLOSER TO HOME,

WE HAVE ONLY TO LOOK AT THE NATIONAL SCIENCE FOUNDATION'S HIGHLY SUCCESSFUL SMALL BUSINESS INNOVATION RESEARCH PROGRAM, ON WHICH H.R. 4326 HAS BEEN MODELED. OVER HALF OF THE SMALL BUSINESS RECIPIENTS OF THE SMALL BUSINESS INNOVATION RESEARCH AWARDS UNDER THE NSF PROGRAM ARE INVOLVED WITH UNIVERSITIES, AND MOST OF THEM USE UNIVERSITY SCIENTISTS AND ENGINEERS AS CONSULTANTS. IN SOME CASES, THERE ARE JOINT UNIVERSITY/SMALL BUSINESS R&D EFFORTS. IN OTHER CASES, SMALL BUSINESSES USE UNIVERSITY FACILITIES AND SPECIAL INSTRUMENTATION. THIS COOPERATION MUST BE FOSTERED, ESPECIALLY IF WE ARE TO DEVELOP AND COMMERCIALLY MARKET THE NEW IDEAS, PRODUCTS, AND PROCESSES THAT WILL ALLOW US TO RETAIN OUR LEAD OVER FOREIGN COMPETITORS.

THE RESOURCES OF THE FEDERAL GOVERNMENT MUST BE INVOLVED IN THIS EFFORT. THE FEDERAL GOVERNMENT TODAY SPENDS $40 BILLION ANNUALLY ON R&D. MOST OF THAT R&D MONEY GOES TO UNIVERSITIES, LARGE COMPANIES, AND GOVERNMENT AND NON-PROFIT RESEARCH INSTITUTIONS. UNFORTUNATELY, SMALL BUSINESSES, INCLUDING SMALL SCIENCE AND HIGH-TECHNOLOGY FIRMS, RECEIVE A PITTANCE--LESS THAN 4 PERCENT OF TOTAL FEDERAL R&D FUNDS.

GIVEN SMALL BUSINESS'S IMPRESSIVE RATE OF INNOVATION AND BELOW-AVERAGE R&D COSTS, IT WOULD BE MUCH MORE EFFICIENT AND COST-EFFECTIVE FOR THE FEDERAL GOVERNMENT TO EARMARK A SMALL PERCENTAGE OF ITS EXISTING R&D BUDGET TO STIMULATE HIGH-QUALITY, WIDE-RANGING AND UNFETTERED INNOVATION BY SMALL SCIENCE AND HIGH-TECHNOLOGY COMPANIES.

H.R. 4326 WOULD DO JUST THAT. THE BILL WOULD HAVE GOVERNMENT AGENCIES WITH R&D BUDGETS EXCEEDING $100 MILLION A YEAR ESTABLISH

SMALL BUSINESS INNOVATION RESEARCH PROGRAMS. ALL TOO OFTEN, SMALL FIRMS FIND IT DIFFICULT TO ATTRACT THE PRIVATE CAPITAL NEEDED TO DEVELOP A NEW IDEA OR PRODUCT. A SMALL AMOUNT OF FEDERAL SUPPORT TO COVER EARLY DEVELOPMENT COSTS WOULD BE IMPORTANT IN GETTING PRIVATE FOLLOW-ON SUPPORT, ESSENTIAL FOR COMMERCIALIZATION. THE SMALL PERCENTAGE OF THE R&D BUDGET EARMARKED TO FUND THE SMALL BUSINESS INNOVATION RESEARCH PROGRAMS AND AWARDS IS NOT A DIVERSION OF R&D MONEY; IT IS AN INVESTMENT IN OUR FUTURE.

WE CAN NO LONGER AFFORD STATUS QUO POLICIES THAT IGNORE THE INNOVATIVE RECORD AND POTENTIAL OF SMALL SCIENCE AND HIGH-TECHNOLOGY COMPANIES AS OUR ECONOMY DECLINES AND AS THE JAPANESE PREPARE TO OVERTAKE US TECHNOLOGICALLY. THE SMALL BUSINESS INNOVATION DEVELOPMENT ACT ESTABLISHES A FORWARD-LOOKING, CREATIVE PROGRAM TO STIMULATE INNOVATION. IT ALSO RECOGNIZES THE LIMITS ON THE GOVERNMENT'S RESOURCES BY PROVIDING FOR THE WISE AND EFFICIENT USE OF FEDERAL FUNDS.

JAN 2 2 1982

Honorable Don Fuqua
Chairman, Committee on
Science and Technology
House of Representatives
Washington, D. C. 20515

Dear Mr. Chairman:

I am pleased to respond to your November 30, 1981, request for the views of the Veterans Administration on H. R. 4326, 97th Congress, the "Small Business Innovation Development Act of 1981." The VA supports enactment of the Senate passed counterpart, S. 881. However, for the following reasons, the VA opposes the enactment of H. R. 4326.

The proposed bill would require agencies having research and development budgets in excess of $100 million a year to establish a small business innovation research (SBIR) program to enable small firms to develop new products and processes. A fixed percentage of an agency's research and development budget, totaling not less than three percent by FY 1985 and thereafter, would be required to be expended for this purpose. Any agency with a research and development budget exceeding $20 million also must establish goals to set-aside a portion of its contracts for award to small businesses.

As in the past, the VA supports efforts which assist small businesses to obtain Government contracts. However, this bill presupposes that research and development projects are accomplished primarily by contract. The VA conducts the preponderance of its research and development projects in-house utilizing its own staff, with only a small percentage of the total VA research and development budget available for contract award. Approximately 80 percent of VA researchers are VA staff who are primarily responsible for patient care. The establishment of a dollar goal as proposed in subsection 4(f) would artificially inflate the goal applicable to the VA, resulting in a greater percentage of the VA's research and development budget than is actually available for contracting purposes.

Honorable Don Fuqua

Since most VA research and development projects are conducted in-house, the Senate bill, S. 881, would not significantly affect the VA research program since the Senate formula exempts in-house research. For this Agency, the Senate bill merely would require the research and development program to establish set-aside goals for small businesses that would continue existing levels of contracting with small business concerns. Additional goals would not be required until total research and development expenditures reached a total of $300 million in a fiscal year.

In accordance with Agency procedures, a decision by the VA to pursue a research and development project is made on the basis of a merit process which each research proposal must undergo prior to approval. I believe, however, that applying an outside influence, such as the mandatory extramural peer review called for in H. R. 4326, may have a detrimental effect on the VA's research and development program.

In response to your specific questions, enactment of H. R. 4326 would not impose a significant additional administrative burden in terms of personnel, time or budget on the VA. The VA already maintains a specialized staff to foster small business programs for the development of plans to increase contract awards, including contracts for research and development, to small businesses for the development of small business source lists; and for the establishment of small business set-aside goals in conjunction with the Small Business Administration. In FY 1982, for example, the VA has established a goal to award contracts totaling 49 percent of total procurements to small businesses.

The VA's procurement practices and policies which are embodied in its regulations, of course, would be modified to reflect the provisions of H. R. 4326 and S. 881, if enacted. These provisions also would be incorporated into the VA's already functioning small business program.

Honorable Don Fuqua

We are advised by the Office of Management and Budget that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely,

ROBERT F. KIMMO
Administrator

NATIONAL INSTITUTE FOR
ENTREPRENEURIAL TECHNOLOGY
an association for small high-technology companies

Philip Speser, J.D., Ph.D.
Executive Director

January 28, 1982

Testimony of Dr. Philip Speser, Executive Director,
National Institute for Entrepreneurial Technology
on the Small Business Innovation Development Act

The problems faced by our economy are familiar: unemployment, sagging productivity, inflation, inefficient use of Federal funds and large deficits, and a lack of competitiveness on world markets. While scientific research is never completely definitive on any policy issue, there is a growing body of literature which strongly suggests that small science and technology based firms make major contributions towards solving these problems. This literature relates these contributions to the vital role such companies play in our national science and technology system.

Despite the significance of small science and technology based companies, and despite repeated Congressional recommendations that Federal agencies fund more research and development (R&D) at these companies, the Federal government continues to spend only around 3.5% of its total R&D budget at small firms.

The Small Business Innovation Development Act, H.R. 4326, will establish a long-needed mechanism through which the Federal agencies can tap the resources of small innovative firms in a particularly effective manner. Modelled on the National Science Foundation's (NSF) highly successful Small Business Innovation Research (SBIR) Program, this Act will enable the Federal government to more efficiently pursue its R&D objectives and will attract private capital to commercialize the results of Federally-funded R&D. The NSF's experience indicates that SBIR programs have significant benefits for economic development, scientists, universities, large firms, and investors as well as participating small companies and agencies. The Senate has already passed its version of the

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legislation by a vote of 90 to 0.

I. The importance of conducting Federally-funded R&D at small companies

In describing the key to New England's economic resurgence, Lynn E. Brown, Assistant Vice President and Economist of the Federal Reserve Bank of Boston, and John S. Hekman, Professor of Economics at Boston College, state: "Many of the products produced in the region today did not exist twenty years ago, and of these a large proportion were developed by smaller firms, whether as a result of university research, government projects, or subcontracts from larger firms. The reindustrialization of New England has come about not through reinvestment by existing industries but by their replacement with new ones. It is well to keep this in mind when formulating economic development strategies. So often such strategies tend to pay the most attention to large established businesses." (Italics in text)

The contributions of small high-technology companies to economic growth are well documented in the records of the Senate and House Small Business Committees hearings on this legislation. Small high-technology firms have one of the fastest rates of growth in net new employment, productivity, sales, exports, net revenues, and tax dollars in our economy.

What is often less well known are the contributions that small high-technology firms make to R&D and innovation. Summarizing their review of the scientific studies concerning the relation between firm size and the efficiency of R&D, Kamien and Schwartz write: "Studies have consistently found actual R&D to be done more efficiently in small or medium size firms than in large firms; it has been estimated that any given project would cost three to ten times as much to develop by a large firm as by a small one. Beyond a certain not very large size, increasing firm size tends to be accompanied by a reduction in patented output per R&D dollar, a reduction in the proportion of patented inventions that are commercially employed, and a decline in the number of significant inventions per R&D dollar." A NSF survey of major innovations introduced to market between 1953 and

1973 found that small firms produced 24 times as many major innovations as large firms and 4 times as many as medium-size firms.

Although concentrating Federally-funded industrial R&D at large firms reduces the efficiency of these expenditures, a recent NSF study noted that in 1979, 20 companies received 71% of all Federal R&D funds contracted to industry. Like other bureaucrats, officials in Federal R&D agencies have strong incentives which discourage them from changing their funding habits. For example, it is far easier -- even if less efficient at times -- to administer one large funding agreement than to administer a number of smaller agreements. If an R&D project fails, and many will since it is the nature of R&D to be risky, few will blame the program manager who funds work only at "established" entities. Furthermore, large firms maintain extensive Washington government relations and marketing staffs. Major universities have special administrative units to coordinate and facilitate faculty efforts to secure R&D awards. Many universities also maintain Washington offices and work through their associations to gain the government relations and marketing advantages enjoyed by large firms. The costs of these operations at large established entities can be spread across a large number of projects.

Unable to afford special units and Washington staffs common among larger entities, small firms face a number of problems in obtaining Federal R&D awards. A 1976 report, Small Business and Federal R&D, from the Office of Management and Budget's Office of Federal Procurement Policy noted that small firms faced impediments in the areas of: stability and efficiency of R&D funding, administrative requirements, nature and timing of Requests for Proposals, the treatment of proposals, and contact with technical personnel. The report emphasized that these impediments prevent the Federal government from taking advantage of the below average R&D costs and "striking record of innovation" that small firms had demonstrated in the private sector. It recommended a variety of measures, including quotas for small firm participation in R&D procurement.

As is the case when stimulating economic development, it is important to keep in mind the track record of innovative small firms when stimulating scientific and technological progress. Too often agency strategies have focused on targeting funding at

universities and large businesses.

The consequences of this failure to implement a balanced R&D funding strategy have left our country with unnecessarily long lead-times between the conceptualization of new scientific ideas and their commercialization and with a restricted pool of radically new technologies for governments and industries to use when meeting the challenges of an uncertain future. While normission basic research conducted at universities and other nonprofit entities provides new scientific concepts, these concepts require futher research before they can be refined into a suitable basis for technologies. The NSF survey of major innovations which was mentioned earlier also found that the most frequently mentioned source of major innovations was applied research, most of which was conducted in-house. The second most frequently mentioned source was basic research, most of which was also performed in-house.

Maximizing the efficiency of Federal funds for R&D conducted in industry requires a sensitivity to the comparative advantages of different types of firms. In his book, Science Policy in the United States, Nat C. Robertson of the U.S. - U.S.S.R. Working Group on Science Policy points out that the first principle for promoting innovation is: "Do not expect the advocates of a present technology simultaneously to nurture a new, competing technology." The Congressional Reference Service's Mary Ellen Mogee, in her article "The Process of Technological Innovation in Industry: A State-of-Knowledge Review for Congress," notes: "Although it is true that most small firms perform no R&D or innovation, evidence suggests that small firms that perform these activities do so more efficiently than large firms." She notes that small firms have comparative advantages in invention and other early phases of the innovation-commercialization process and in developing radically new innovations due to the flexibility of these firms and their ease of internal communications. Large firms have comparative advantages in the later phases of the innovation process and in improving and scaling up earlier breakthroughs for mass production and distribution due to their greater financial resources and their more extensive R&D facilities.

The importance of government funding for small firms is highlighted by the National

Science Board's Science Indicators 1980. It confirms what small high-technology firms know from experience; "Year-to-year changes in company funded R&D closely follow changes in cash flow from the preceeding year." Small firms find it difficult to attract the funds necessary to support basic and applied research on ideas still at the conceptual stage. The higher debt-to-equity ratios of many of these firms limits their access to outside capital sources utilized by larger firms, a problem compunded by the present high interest rates and tight credit markets. In earlier hearings on this legislation, representatives of the venture capital community testified that venture capitalists are reluctant to invest in companies without a proven track record or in projects which are difficult to evaluate since they are still far from the prototype stage. Furthermore, tax incentives for R&D are of little help for companies with low margional tax rates or no taxable income at all. A study by Robert S. Kaplan, Yuji Ijiri, and Michael Visscher of the Graduate School of Industrial Administration at Carnegie-Mellon University concluded: "it would seem that a program of direct government support of innovation is preferable to tax incentives."

Several studies emphasize the importance of government funding during the early years of small high-technology firms and for long-term, high risk projects by these companies. For example, Professor Edward B. Roberts of the Massachusetts Institute of Technology discovered that government support was essential for over 200 firms founded by ex-employees of M.I.T.'s labs and academic departments during the early years of these firms. He also found that these firms rapidly turned to the commercial market for their business. Noting that such firms "seldom fail," Roberts concluded: "The implications of these findings are important. They demonstrate that the flow of entrepreneurs out of advanced technical organizations into their own businesses can create significant technology transfer as well as impressive commercial and economic impact. When the source of these companies is a university or government laboratory, the flow is unquestionably beneficial to society."

II. The unique advantages of Small Business Innovation Research Programs

Several recent academic and government studies have focused on measures which would improve the efficiency of Federal R&D efforts designed to stimulate innovation in areas of importance to Federal agencies and the country-at-large. William J. Abernathy of the Harvard Business School and Balaji S. Chakravarthy of the Wharton School at the University of Pennsylvania have emphasized the importance of providing for both technology push (i.e. direct government support for the development of new technologies) and technology pull (i.e. government provision of incentives for the use of new technology by the private sector or the government itself). Herbert I. Fusfeld and Richard N. Langlois of the New York University Center for Science and Technology Policy and Richard R. Nelson of the Yale University Institution for Social and Policy Studies recommend on the basis of their review of civilian-sector R&D programs that: "Federal support for applied research and directed basic research should be guided by specific arguments about particular technologies and types of projects "undersupported" by the private sector — not by general arguments about the overall inadequacy of private R&D spending. And any proposal for programs to intervene in private sector R&D should have a clear and specific structure in mind to allocate the research dollars."

Small Business Innovation Research programs have been found to be effective means for increasing the efficiency of Federal government R&D efforts and for attracting private capital to commercialize the results of Federally-funded R&D. In its 1981 report, "Consistent Criteria Are Needed to Assess Small Business Innovation Initiatives," the Government Accounting Office concluded that the NFS SBIR Program meets all the criteria necessary for innovation to occur. These criteria are: 1) encouragement for the exploitation of technological opportunity, 2) provision of a mechanism to insure that the firm sponsoring the innovation has the managerial and technical capacity to support the innovation process, 3) provision of a mechanism to insure adequate financial and human resources, and 4) encouragement of innovation in technologies and industries in which small businesses can be expected to assemble the necessary resources to support innovation. The House Subcommittees on Investigations and Oversight and Science, Research, and Technology concluded: "NSF's Small Business Innovation Research (SBIR) program is an

outstanding example of how a Federal agency can encourage and promote innovation," and recommended, "Federal agencies should examine NSF's SBIR program and implement similar type programs which comport with their own needs." Last session, the House Committee on Science and Technology described the NSF SBIR program as one of NSF's "most successful initiatives outside of the core university basic research support programs" and praised its ability to link technology push and technology pull features.

H.R. 4326, like its companion version in the Senate, was drafted to maximize the benefits that SBIR programs bring to science and technology. Small firms must first successfully complete a feasibility study before they can even compete for major R&D funding. Peer review is required on at least Phase II proposals. The Office of Science and Technology Policy is given a major role in the oversight of the implementation and operation of the legislation. And to ensure that the results of Federally-funded R&D do not sit on the shelf, between Phase II proposals of approximately equal scientific and technical merit, those proposals which have attracted follow-on commitments of private capital to commercialize the R&D results are given preference.

This legislation also ensures the agencies sufficient flexibility to implement the programs in ways which comport with their own needs. It vests the agencies with sole authority over the topics of projects to be included in SBIR solicitations, over the evaluation of SBIR proposals, over the selection of awardees, and over the administration of SBIR funding agreements. At the same time, the legislation ensures that bureaucratic inertia does not inhibit the vitality of the programs by earmarking a small percentage of an agency's total R&D budget for an SBIR program.

Not surprisingly, this legislation has attracted broad bipartisan support. The Senate passed its version by a vote of 90 to 0. President Reagan has stated that all sectors of the economy are likely to benefit from this legislation.

III. The benefits this legislation will create

The NSF's SBIR program has demonstrated that significant benefits can be created even though, unlike many other Federal programs, the SBIR program places a minimal

financial burden on the Treasury and a minimal administrative burden on participating small firms and the agency. SBIR projects secure R&D work for the Federal government which is of comparable quality to work currently funded at universities, large businesses, and non-profit institutes. In addition, SBIR projects have attracted over $4 of private sector money for each $1 of Federal funds in the process of moving through Phases I and II. This spurs the development of new technologies and their commercialization by facilitating the ability of small firms to attract private capital. At the same time, it benefits investors by lowering the risks associated with longer-term R&D investments.

The growth that participation in NSF's SBIR program brings to small firms indicates that establishing programs throughout the government would enhance the career opportunities for scientists, engineers, and skilled technicians -- as well as other workers. In addition, since over half of the participants in the NSF program have coupled with either universities or university-based researchers in the course of their projects, establishment of SBIR programs throughout the government would provide a major impetus for new types of university-industry-government partnerships in R&D. These partnerships will involve both large and small companies. Many large firms have already entered into agreements with NSF participants to license new technologies developed through the program or to fund further research on the technologies.

The citizenry as a whole will benefit from this legislation. We need new technologies which will make our workplaces safer and healthier for those who work in them and those who live by them. We need new technologies which will provide meaningful and satisfying employment. And we need new technologies which will provide new, high quality, useful, and inexpensive products. The Small Business Innovation Development Act is a modest approach to the development of the technologies we will need to face the challenges of the future.

DAV

Motto: "If I cannot speak good of my comrade, I will not speak ill of him."

DISABLED AMERICAN VETERANS

NATIONAL SERVICE and LEGISLATIVE HEADQUARTERS
807 MAINE AVENUE, S.W.
WASHINGTON, D.C. 20024
(202) 554-3501

February 2, 1982

Honorable Ronald M. Mottl, Chairman
Subcommittee on Hospitals & Health Care
House Committee on Veterans Affairs
335 Cannon House Office Building
Washington, DC 20515

Dear Chairman Mottl:

Thank you for extending to us this opportunity to comment on H.R. 4326, The Small Business Innovation Development Act.

As we understand it, the measure proposes to divert a percentage of research and development funding from all federal agencies to the private sector--namely, small businesses. If enacted, H.R. 4326 would require each federal agency with a research and development budget that exceeds $100 million, to set aside 3% of such funding for small business firms.

Let me state here, Mr. Chairman, that the DAV, for a variety of reasons, is opposed to those provisions of H.R. 4326 which, in effect, would further restrict the vital research funding available to the Veterans Administration.

As you know, funding for VA's Medical and Prosthetic Research Program has not fared well in recent years. For example, in Fiscal Year 1982 the VA research budget was cut $22 million below the original amount proposed by the House and Senate Appropriations Committees and the Fiscal Year 1982 figures are actually $12 million below the funding levels provided in Fiscal Year 1981.

In our view, to require the VA to set aside an additional $3.8 million as mandated by H.R. 4326 would adversely impact on both the quality and scope of most VA research projects, if not, in fact, result in the elimination of others. In addition, we are extremely concerned over how the 3% reduction in funding would be applied within the VA itself.

For example, for the remainder of this Fiscal Year, the VA will operate with approximately $12 million less in research funds. We have learned that in allocating this reduction, biomedical research within the VA was reduced by approximately 6% while prosthetics research (Rehabilitation Engineering Research and Development) sustained a 20% cut.

As we pointed out in hearings held by this Committee last November 5, the DAV is vitally concerned about VA's failure to address the needs and concerns of service-connected disabled veterans who rely upon prosthetic and orthodic devices. Further reductions which would occur if H.R. 4326 were enacted, together with the Fiscal Year 1982 cut in the VA's Rehabilitation Engineering Research and Development Program can only serve to further curtail VA's research and development of prosthetic and orthodic devices.

Mr. Chairman, on August 24, 1981 the VA's Office of Planning and Program evaluation released a study of the VA Medical Research Program. Highlighting the Study Findings and Conclusions, the report states:

> One more important aspect of this contribution to patient care is the impact of research on recruitment and retention of excellent clinical staffs. Eighty-two percent of the physicians involved in research responding to an evaluation survey indicated that the opportunity to conduct research was either the most important factor or a major factor in their recruitment and retention with the Veterans Administration. More detailed analysis of this data together with the data from other surveys discloses that by offering the research opportunity, VA is successfully attracting and retaining at relatively low cost the type of physician who is interested in a career in academic medicine, in which he or she can combine teaching, patient care and research.

In this connection, we must seriously question the intent of a measure which simply sets quotas for doling out federal research funds and ignores the inherent value that in-house VA research has upon the quality of care provided to veteran patients.

Finally, Mr. Chairman, in our opinion, the provisions of H.R. 4326 violate competition for federal research dollars which could eventually lead to mandatory funding of mediocre research projects. Further, the bill establishes a minimum level of funding for small businesses which, in some instances, would be in addition to funds already awarded to small business firms through normal competitive contract and grant awards procedures.

Accordingly, on behalf of the 700,000 members of the Disabled American Veterans, we strongly urge you to recommend an exemption from the provisions of H.R. 4326 for the VA's Medical and Prosthetic Research Program when you report the measure to the full Committee on Veterans Affairs.

Again, thank you for allowing us this opportunity to express our views on this important subject.

Sincerely yours,

CHARLES E. JOECKEL, JR.
Deputy National Legislative Director

CEJ:ah

STATEMENT OF JOHN F. SOMMER, JR., DEPUTY DIRECTOR
NATIONAL VETERANS AFFAIRS AND REHABILITATION COMMISSION
THE AMERICAN LEGION
TO THE SUBCOMMITTEE ON HOSPITALS AND HEALTH CARE
COMMITTEE ON VETERANS AFFAIRS
HOUSE OF REPRESENTATIVES
JANUARY 27, 1982

Mr. Chairman and Members of the Subcommittee:

The American Legion appreciates the opportunity to present its views on the legislative proposal under consideration today, H.R. 4326, cited as the "Small Business Innovation Development Act of 1981."

In essence, the intent of this measure is to require each Federal agency having a research or R&D budget in excess of $100 million in FY 1982 or any fiscal year thereafter to expend not less than .5 per centum of such budget in FY 1982, or in such subsequent fiscal year as the agency has such budget; not less than 1 per centum of such budget in the second fiscal year thereafter; not less than 2 per centum of the budget in the third fiscal year thereafter; and not less than 3 per centum of such budget in all subsequent fiscal years with small business concerns specifically in connection with a small business innovation research program which would meet the requirements of the proposed Small Business Innovation Development Act of 1981 and regulations issued thereunder. According to the proposal, the foregoing requirements would be over and above the funding agreements with small business concerns for research or research and development which result from competitive or single source selections other than under a small business innovation research program.

The stated purposes of H.R. 4326 are to stimulate technological innovation; to use small businesses to meet Federal research and development needs; and to increase private sector commercialization innovations derived from Federal research and development.

Mr. Chairman, The American Legion is deeply concerned and questions the current adequacy of funding of Veterans Administration medical research programs, particularly since there was a $22.4 million reduction in the FY 82 appropriation for medical and prosthetic research.

An important emanation of the VA medical research program is the attraction to and retention of highly qualified professional staff into the service of the VA Department of Medicine and Surgery. All but a modicum of this research is carried out by investigators within the Veterans Administration, all of whom are on the VA staff, and about 80 percent of whom are involved in direct patient care.

An example of the major significance of this research is the fact that two VA career scientists and senior medical investigators, Dr. Rosalyn Yalow of the Bronx VA Medical Center, and Dr. Andrew Schally, VA Medical Center, New Orleans, were awarded the coveted Nobel Prize in the field of medicine in 1977.

The VA Office of Planning and Program Evaluation recently completed an evaluation of the agency's medical research program, and in reviewing the report thereon we find that the program received high marks in almost all areas. The evaluation of the program goals and objectives illustrates that in a majority of

instances the goals are being fully met. In those cases where the goals are being partially met, the major underlying factor is inadequate funding.

The evaluation report describes the several missions of VA medical research as follows:

"Solving medical problems of particular importance to veterans;

"Supporting the recruitment and retention of excellent clinicians and other professional staff;

"Conducting clinical research which rapidly transfers from laboratory to patient care;

"Fostering a spirit of inquiry among VA clinical staff;

"Making unique contributions to the health care of the nation."

The Veterans Administration, Department of Medicine and Surgery can ill afford to mandatorily set aside additional monies from the presently declining medical and prosthetic research budget for any purpose. Further dilution would only diminish the viability of this vital program, thereby weakening the entire VA medical care system.

In conclusion, The American Legion will not support any proposal that would do harm to the high quality of VA medical research, or that could adversely affect the quality of care delivered to sick and disabled veterans. Therefore, the Legion cannot support the provisions of H.R. 4326.

Mr. Chairman, that concludes our statement.

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97TH CONGRESS
1ST SESSION

H. R. 4326

[Report No. 97-349, Part I]

To amend the Small Business Act to strengthen the role of the small, innovative firms in federally funded research and development, and to utilize Federal research and development as a base for technological innovation to meet agency needs and to contribute to the growth and strength of the Nation's economy.

IN THE HOUSE OF REPRESENTATIVES

JULY 29, 1981

Mr. LAFALCE introduced the following bill; which was referred to the Committee on Small Business

NOVEMBER 20, 1981

Additional sponsors: Mr. MITCHELL of Maryland, Mr. SMITH of Iowa, Mr. ADDABBO, Mr. GONZALEZ, Mr. BEDELL, Mr. RICHMOND, Mr. NOWAK, Mr. LUKEN, Mr. IRELAND, Mr. SKELTON, Mr. EVANS of Georgia, Mr. STENHOLM, Mr. MAZZOLI, Mr. MAVROULES, Mr. CROCKETT, Mr. HATCHER, Mr. WYDEN, Mr. ECKART, Mr. DORGAN of North Dakota, Mr. SAVAGE, Mr. ROEMER, Mr. FARY, Mr. MCDADE, Mr. CONTE, Mr. STANTON of Ohio, Mr. BROOMFIELD, Mr. MARRIOTT, Mr. WILLIAMS of Ohio, Mrs. SNOWE, Mr. DANIEL B. CRANE, Mr. HILER, Mr. STATON of West Virginia, Mr. WEBER of Minnesota, Mr. DAUB, Mr. SMITH of New Jersey, Mr. WEBER of Ohio, Mr. DREIER, Mr. MOLINARI, Mr. SILJANDER, Mr. AKAKA, Mr. ATKINSON, Mr. BARNARD, Mr. BARNES, Mr. BEVILL, Mr. BONKER, Mr. BOWEN, Mr. BROWN of Ohio, Mr. CLAY, Mr. CLINGER, Mr. COELHO, Mr. CORRADA, Mr. D'AMOURS, Mr. DASCHLE, Mr. DIXON, Mr. DUNN, Mr. DWYER, Mr. EDGAR, Mr. FAUNTROY, Ms. FERRARO, Mr. FISH, Mr. FOGLIETTA, Mr. FORD of Tennessee, Mr. FRANK, Mr. GEJDENSON, Mr. GINGRICH, Mr. GLICKMAN, Mr. GREEN, Mr. HANSEN of Utah, Mr. HORTON, Mr. HOYER, Mr. HUGHES, Mr. KILDEE, Mr. KOGOVSEK, Mr. LANTOS, Mr. LEACH of Iowa, Mr. LEWIS, Mr. LOWERY of California, Mr. LUNDINE, Mr. MCHUGH, Mr. MCKINNEY, Mr. MADIGAN, Mr. MARKEY, Mr. MARKS, Mr. MARTIN of New York, Mrs. MARTIN of Illinois, Mr. MICA, Ms. MIKULSKI, Mr. MONTGOMERY, Mr. MURPHY, Mr. NEAL, Mr. NELLIGAN, Mr. PATTERSON, Mr. PORTER, Mr. PRITCHARD, Mr. RAHALL, Mr. RAILSBACK, Mr. RODINO, Mr.

ROE, Mr. ROTH, Mr. SEIBERLING, Mr. SOLOMON, Mr. STANGELAND, Mr. SUNIA, Mr. VENTO, Mr. WEAVER, Mr. WILSON, Mr. WIRTH, Mr. WOLPE, Mr. WON PAT, Mr. WORTLEY, Mrs. COLLINS of Illinois, Mr. FAZIO, Mr. MITCHELL of New York, Mr. DYSON, Mr. STOKES, Mr. MYERS, and Mr. COATS

NOVEMBER 20, 1981

Reported with an amendment and referred to the Committee on Armed Services, to the Committee on Energy and Commerce and to the Committee on Science and Technology for a period ending not later than March 1, 1982, for consideration of such portions of the bill and amendment as fall within the jurisdiction of those committees under clause 1(c), 1(h), and 1(r), rule X respectively

[Strike out all after the enacting clause and insert the part printed in italic]

A BILL

To amend the Small Business Act to strengthen the role of the small, innovative firms in federally funded research and development, and to utilize Federal research and development as a base for technological innovation to meet agency needs and to contribute to the growth and strength of the Nation's economy.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

~~SECTION 1. This Act may be cited as the "Small Business Innovation Development Act of 1981".~~

~~SEC. 2. (a) The Congress finds that—~~

~~(1) technological innovation creates jobs, increases productivity, competition, and economic growth, and is a valuable counterforce to inflation and the United States balance-of-payments deficit; and~~

(2) while small business is the principal source of significant innovations in the Nation, the vast majority of federally funded research and development is conducted by large businesses, universities, and Government laboratories.

(b) Therefore, the purposes of this Act are—

(1) to stimulate technological innovation;

(2) to use small businesses to meet Federal research and development needs; and

(3) to increase private sector commercialization of innovations derived from Federal research and development.

SEC. 3. Section 9(b) of the Small Business Act is amended—

(1) by striking out "and" at the end of clause (2);

(2) by striking out the period at the end of clause (3) and inserting in lieu thereof "; and"; and

(3) by adding at the end thereof the following:

"(4) to develop and maintain a source file and an information program to assure each qualified and interested small business concern the opportunity to participate in Federal agency small business innovation research programs;

"(5) to coordinate with participating agencies a schedule for release of SBIR solicitations, and to pre-

pare a master release schedule so as to maximize small businesses opportunities to respond to solicitations;

"(6) to independently survey and monitor the operation of SBIR programs within participating Federal agencies; and

"(7) to report annually to the Committee on Small Business of the Senate and the Committee on Small Business of the House of Representatives on the SBIR programs of the Federal agencies and the Administration's information and monitoring efforts related to the SBIR programs.".

SEC. 4. Section 9 of the Small Business Act is amended by adding at the end thereof the following new subsections:

"(e For the purpose of this section—

"(1) the term 'Federal agency' means an executive agency as defined in section 105 of title 5, United Staes Code, or a military department as defined in section 102 of such title;

"(2) the term 'funding agreement' means any contract, grant, or cooperative agreement entered into between any Federal agency and any small business for the performance of experimental, developmental, or research work funded in whole or in part by the Federal Government;

"(3) the term 'Small Business Innovation Research program' or 'SBIR' means a program under which a portion of a Federal agency's research or research and development effort is reserved for award to small business concerns through a simplified, standardized acquisition process having a first phase for determining, insofar as possible, the technical and economic feasibility of ideas proposed under the program, and a second phase, the awarding of which shall take into consideration the potential commercial applications of the research or research and development, to further develop the proposed idea to meet the particular agency needs; and a third phase where private capital pursues commercial applications of the research or research and development; phase three may also involve follow-on production contracts with some agencies for products or processes intended for use by the United States Government; and

"(4) the term 'research' or 'research and development' means any activity which is (A) a systematic study directed toward fuller scientific knowledge of the subject studied; (B) a systematic study directed specifically toward applying new scientific knowledge to meet a recognized need; or (C) a systematic application of new scientific knowledge toward production of useful

materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements. Such term does not include studies related to the social sciences or the humanities.

"(f) Each Federal agency which has a research or research and development budget in excess of $100,000,000 for any fiscal year beginning with fiscal year 1982 shall expend not less than 1 per centum of such budget for fiscal year 1982, and not less than 2 per centum for all subsequent fiscal years with small business concerns specifically in connection with a small business innovation research program which meets the requirements of this Act and regulations issued hereunder. Funding agreements with small business concerns for research or research and development which result from competitive or single source selections other than under a small business innovation research program shall not be counted as meeting any portion of the percentage requirements of this section.

"(g) Each Federal agency required by subsection (f) to establish a small business innovation research program shall in accordance with this Act and regulations issued hereunder—

"(1) establish an agency small business innovation research program;

"(2) determine categories of projects to be in its SBIR program;

"(3) issue small business innovation research solicitations in accordance with a schedule determined cooperatively with the Small Business Administration;

"(4) receive and evaluate proposals resulting from SBIR proposals;

"(5) select awardees for its SBIR funding agreements;

"(6) administer its own SBIR funding agreements (or delegate such administration to another agency);

"(7) make payments to recipients of SBIR funding agreements on the basis of progress toward or completion of the funding agreement requirements; and

"(8) make an annual report on the SBIR program to the Small Business Administration.

"(h) In addition to the requirements of subsection (f), each Federal agency which has a budget for research or research and development in excess of $20,000,000 for any fiscal year beginning with fiscal year 1982 shall establish goals specifically for funding agreements for research or research and development to small business concerns, and no goal established under this subsection shall be less in actual dollars than the amount of research or research and development awards made to small businesses in 1981.

"(i) Each Federal agency required by this section to have an SBIR program or to establish goals shall report annually to the Small Business Administration the number of awards pursuant to grants, contracts, or cooperative agreements over $10,000 in amount and the dollar value of all such awards, identifying SBIR awards and comparing the number and amount of such awards with awards to other than small business concerns.

"(j)(1) The Administrator of the Office of Federal Procurement Policy, in conjunction with the Small Business Administration, shall promulgate and issue appropriate regulations, in accordance with the provisions of subsections (f), (g), and (h) and within one hundred and twenty days after the date of enactment of the Small Business Innovation Research Act of 1981, for conduct of small business innovation research programs within the Federal Government. Such regulations shall—

"(A) provide for simplified standardized and timely SBIR solicitations, proposals, and evaluation processes; and

"(B) require Federal agencies to coordinate SBIR solicitation release schedules with the Small Business Administration.

"(2) The National Science Foundation and the Small Business Administration shall furnish the Administrator of

~~the Office of Federal Procurement Policy advice and assistance in the promulgation of regulations under this section.".~~

~~SEC. 5. The amendments made by this Act do not authorize the appropriation of funds.~~

SECTION 1. This Act may be cited as the "Small Business Innovation Development Act of 1981".

SEC. 2. (a) The Congress finds that—

(1) technological innovation creates jobs, increases productivity, competition, and economic growth, and is a valuable counterforce to inflation and the United States balance-of-payments deficit;

(2) while small business is the principal source of significant innovations in the Nation, the vast majority of federally funded research and development is conducted by large businesses, universities, and Government laboratories; and

(3) small businesses are among the most cost-effective performers of research and development and are particularly capable of developing research and development results into new products.

(b) Therefore, the purposes of this Act are—

(1) to stimulate technological innovation;

(2) to use small businesses to meet Federal research and development needs; and

(3) to increase private sector commercialization innovations derived from Federal research and development.

SEC. 3. Section 9(b) of the Small Business Act is amended—

(1) by striking out "and" at the end of paragraph (2);

(2) by striking out the period at the end of paragraph (3) and inserting in lieu thereof "; and"; and

(3) by adding at the end thereof the following:

"(4) to develop and maintain a source file and an information program to assure each qualified and interested small business concern the opportunity to participate in Federal agency small business innovation research programs;

"(5) to coordinate with participating agencies a schedule for release of SBIR solicitations, and to prepare a master release schedule so as to maximize small businesses' opportunities to respond to solicitations;

"(6) to independently survey and monitor the operation of SBIR programs within participating Federal agencies; and

"(7) to report not less than annually to the Committee on Small Business of the Senate and the Committee on Small Business of the House of Representa-

tives on the SBIR programs of the Federal agencies and the Administration's information and monitoring efforts related to the SBIR programs.".

SEC. 4. Section 9 of the Small Business Act is amended by adding at the end thereof the following new subsections:

"(e) For the purpose of this section—

"(1) the term 'Federal agency' means an executive agency as defined in section 105 of title 5, United States Code, or a military department as defined in section 102 of such title;

"(2) the term 'funding agreement' means any contract, grant, or cooperative agreement entered into between any Federal agency and any small business for the performance of experimental, developmental, or research work funded in whole or in part by the Federal Government;

"(3) the term 'Small Business Innovation Research Program' or 'SBIR' means a program under which a portion of a Federal agency's research or research and development effort is reserved for award to small business concerns through a uniform process having—

"(A) a first phase for determining, insofar as possible, the scientific and technical merit and

feasibility of ideas submitted pursuant to SBIR program solicitations;

"(B) a second phase to further develop the proposed ideas to meet the particular program needs, the awarding of which shall take into consideration the scientific and technical merit and feasibility evidenced by the first phase and, where two or more proposals are evaluated as being of approximately equal scientific and technical merit and feasibility, special consideration shall be given to those proposals that have demonstrated third phase, non-Federal capital commitments; and

"(C) where appropriate, a third phase in which non-Federal capital pursues commercial applications of the research or research and development and which may also involve follow-on production contracts with a Federal agency for products or processes intended for use by the United States Government; and

"(4) the term 'research' or 'research and development' means any activity which is (A) a systematic, intensive study directed toward greater knowledge or understanding of the subject studied; (B) a systematic study directed specifically toward applying new knowl-

edge to meet a recognized need; or (C) a systematic application of knowledge toward the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements.

"(f) Each Federal agency which has a research or research and development budget in excess of $100,000,000 for fiscal year 1982, or any fiscal year thereafter, shall expend not less than 0.5 per centum of such budget in fiscal year 1982 or in such subsequent fiscal year as the agency has such budget, not less than 1 per centum of such budget in the second fiscal year thereafter, not less than 2 per centum of such budget in the third fiscal year thereafter, and not less than 3 per centum of such budget in all subsequent fiscal years with small business concerns specifically in connection with a small business innovation research program which meets the requirements of the Small Business Innovation Development Act of 1981 and regulations issued thereunder. Funding agreements with small business concerns for research or research and development which result from competitive or single source selections other than under a small business innovation research program shall not be counted as meeting any portion of the percentage requirements of this section.

"(g) Each Federal agency required by subsection (f) to establish a small business innovation research program shall, in accordance with this Act and regulations issued hereunder—

"(1) unilaterally determine categories of projects to be in its SBIR program;

"(2) issue small business innovation research solicitations in accordance with a schedule determined cooperatively with the Small Business Administration;

"(3) unilaterally receive and evaluate proposals resulting from SBIR proposals;

"(4) unilaterally select awardees for its SBIR funding agreements;

"(5) administer its own SBIR funding agreements (or delegate such administration to another agency);

"(6) make payments to recipients of SBIR funding agreements on the basis of progress toward or completion of the funding agreement requirements; and

"(7) make an annual report on the SBIR program to the Small Business Administration and the Office of Science and Technology Policy.

"(h) In addition to the requirements of subsection (f), each Federal agency which has a budget for research or research and development in excess of $20,000,000 for any

fiscal year beginning with fiscal year 1982 or subsequent fiscal year shall establish goals specifically for funding agreements for research or research and development to small business concerns, and no goal established under this subsection shall be less than the percentage of the agency's research or research and development budget expended under funding agreements with small business concerns in the immediately preceding fiscal year.

"(i) Each Federal agency required by this section to have an SBIR program or to establish goals shall report annually to the Small Business Administration the number of awards pursuant to grants, contracts, or cooperative agreements over $10,000 in amount and the dollar value of all such awards, identifying SBIR awards and comparing the number and amount of such awards with awards to other than small business concerns.

"(j) The Small Business Administration, after consultation with the Administrator of the Office of Federal Procurement Policy, the Director of the Office of Science and Technology Policy, and the Intergovernmental Affairs Division of the Office of Management and Budget, shall, within one hundred and twenty days of the enactment of the Small Business Innovation Development Act of 1981, issue policy directives for the general conduct of the SBIR programs within the Federal Government, including providing for—

"(1) simplified, standardized, and timely SBIR solicitations;

"(2) a simplified, standardized funding process which provides for (A) the timely receipt and review of proposals; (B) outside peer review for at least phase two proposals; (C) protection of proprietary information provided in proposals; (D) selection of awardees; (E) retention of rights in data generated in the performance of the contract by the small business concern; (F) transfer of title to property provided by the agency to the small business concern if such a transfer would be more cost effective than recovery of the property by the agency; (G) cost sharing; and (H) cost principles and payment schedules;

"(3) exemptions from the regulations under paragraph (2) if national security or intelligence functions clearly would be jeopardized;

"(4) minimizing regulatory burden associated with participation in the SBIR program for the small business concern which will stimulate the cost-effective conduct of Federal research and development and the likelihood of commercialization of the results of research and development conducted under the SBIR program; and

"(5) simplified, standardized, and timely annual report on the SBIR program to the Small Business Administration and the Office of Science and Technology Policy.

"(k) The Director of the Office of Science and Technology Policy, in consultation with the Federal Coordinating Council for Science, Engineering and Research, shall, in addition to such other responsibilities imposed upon him by the Small Business Innovation Development Act of 1981—

"(1) independently survey and monitor all phases of the implementation and operation of SBIR programs within agencies required to establish an SBIR program, including compliance with the expenditures of funds according to the requirements of subsection (f) of this section; and

"(2) report not less than annually, and at such other times as the Director may deem appropriate, to the Committees on Small Business of the Senate and the House of Representatives on all phases of the implementation and operation of SBIR programs within agencies required to establish an SBIR program, together with such recommendations as the Director may deem appropriate.".

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